U.S. DEPARTMENT OF COMMERCE
National Technical Information Service

PB-256 439

Second Annual Report. Part I
March 1, 1974 - March 1, 1975

Environmental Protection Agency

May 1975

238087

PB 256 439

SECOND ANNUAL REPORT
EFFLUENT STANDARDS AND WATER QUALITY INFORMATION ADVISORY COMMITTEE

MARCH 2, 1974 - MARCH 1, 1975

PART I

REPRODUCED BY
NATIONAL TECHNICAL
INFORMATION SERVICE
U.S. DEPARTMENT OF COMMERCE
SPRINGFIELD, VA. 22161

BIBLIOGRAPHIC DATA SHEET	1. Report No. ES&WQIAC - 2-A	2.	3. Recipient's Accession No.

4. Title and Subtitle
EFFLUENT STANDARDS AND WATER QUALITY INFO. ADVISORY COMMITTEE - SECOND ANNUAL REPORT PART I
MARCH 1, 1974 - MARCH 1, 1975

5. Report Date
May 1975

6.

7. Author(s) Dr. Martha Sager, Mr. Martin Brossman

8. Performing Organization Rept. No.

9. Performing Organization Name and Address

ES&WQIAC-EPA
Room 821 CM#2
Washington, D. C. 20460

10. Project/Task/Work Unit No.

11. Contract/Grant No.

12. Sponsoring Organization Name and Address

SAME AS ABOVE

13. Type of Report & Period Covered
Final, 3/74-3/75

14.

15. Supplementary Notes

16. Abstracts

This is the second annual report of the Effluent Standards and Water Quality Information Advisory Committee (ES&WQIAC) to the Administrator of EPA. The first chapter of Part I of the report describes the legislative basis of the Committee, its structure, and a summary of its activities to March 1, 1975. Subsequent chapters provide an overview of the Committee's activities and results achieved. Many of ES&WQIAC's hearings and workshops were summarized in the Bureau of National affairs Environmental Reporter and some of these have been included in this report. Part II of the report includes the detailed comments provided by the Committee during the process of development of effluent limitations by EPA.

17. Key Words and Document Analysis. 17a. Descriptors

Reporting 0501
RT Summarizing The Effluent Standards and Water Quality Information Advisory Committee Activities for 1974-75

17b. Identifiers/Open-Ended Terms

PRICES SUBJECT TO CHANGE

17c. COSATI Field/Group

18. Availability Statement
Release Unlimited

19. Security Class (This Report)
UNCLASSIFIED

20. Security Class (This Page
UNCLASSIFIED

21. No. of Pages
134

22. Price
6.00

i

ANNUAL REPORT
OF
ACTIVITIES
OF THE
EFFLUENT STANDARDS AND WATER QUALITY INFORMATION ADVISORY COMMITTEE

PART I

ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C.

MARCH 2, 1974 - MARCH 1, 1975

ia

FOREWORD

This is the second annual report of the Effluent Standards and Water Quality Information Advisory Committee (ES&WQIAC) to the Administrator of EPA.

The ES&WQIAC was established as a statutory Advisory Committee under PL 92-500 to provide, assess, and evaluate scientific and technical information on effluent standards and limitations. This report summarizes the legislative basis and operations of the Committee for the period March 2, 1974 to March 1, 1975. The report consists of two parts, bound separately.

The first chapter of Part I of the report describes the legislative basis of the committee, its structure, and a summary of its activities to March 1, 1975. Subsequent chapters provide an overview of the Committee's activities and results achieved. Many of ES&WQIAC's hearings and workshops were summarized in the Bureau of National Affairs Environmental Reporter and some of these have been included in this report.

Part II of the report includes the detailed comments provided by the Committee during the process of development of effluent limitations by EPA.

Dr. Martha Sager, Chairman

TABLE OF CONTENTS

FOREWORD

1. Legislative Basis........................... 1
2. Committee Membership........................ 13
3. Overview.................................... 19
4. Legal Activities............................ 25
5. ES&WQIAC Workshops.......................... 31
6. Committee Meetings.......................... 53
7. Congressional Liaison....................... 63
8. Toxic Substances............................ 85
9. Special Projects and Conferences............ 89
10. Review of EPA Documents.................... 109
11. Information Transfer....................... 125

APPENDIX

Budget Justification........................... 137
Charter.. 149
Activity Participation......................... 153

LEGISLATIVE BASIS

LEGISLATIVE BASIS

The Effluent Standards and Water Quality Information Advisory Committee (ES&WQIAC) is a statutory committee which was established in Section 515 of the Federal Water Pollution Control Act as amended in 1972, i.e., PL 92-500. An extract of this Section of PL 92-500 follows:

Preceding page blank

"EFFLUENT STANDARDS AND WATER QUALITY INFORMATION ADVISORY COMMITTEE

ESTABLISHMENT

"SEC. 515. (a)(1) There is established on Effluent Standards and Water Quality Information Advisory Committee, which shall be composed of a Chairman and eight members who shall be appointed by the Administrator within sixty days after the date of enactment of this Act.

MEMBERSHIP

"(2) All members of the Committee shall be selected from the scientific community, qualified by education, training, and experience to provide, assess, and evaluate scientific and technical information on effluent standards and limitations.

TERM

"(3) Members of the Committee shall serve for a term of four years, and may be reappointed.

PROPOSED REGULATIONS

PUBLIC HEARING

"(b)(1) No later than one hundred and eighty days prior to the date on which the Administrator is required to publish any proposed regulations required by section 304(b) of this Act, any proposed standard of performance for new sources required by section 306 of this Act, or any proposed toxic effluent standard required by section 307 of this Act, he shall transmit to the Committee a notice of intent to propose such regulations. The Chairman of the Committee within ten days after receipt of such notice may publish a notice of a public hearing by the Committee, to be held within thirty days.

"(2) No later than one hundred and twenty days after receipt of such notice, the Committee shall transmit to the Administrator such scientific and technical information as is in its possession, including that presented at any public hearing, related to the subject matter contained in such notice.

"(3) Information so transmitted to the Administrator shall constitute a part of the administrative record and comments on any proposed regulations or standards as information to be considered with other comments and information in making any final determinations.

"(4) In preparing information for transmittal, the Committee shall avail itself of the technical and scientific services of any Federal agency, including the United States Geological Survey and any national environmental laboratories which may be established.

SECRETARY

LEGAL COUNSEL

5 USC 5101, 5331

"(c)(1) The Committee shall appoint and prescribe the duties of a Secretary, and such legal counsel as it deems necessary. The Committee shall appoint such other employees as it deems necessary to exercise and fulfill its powers and responsibilities. The compensation of all employees appointed by the Committee shall be fixed in accordance with chapter 51 and subchapter III of chapter 53 of title V of the United States Code.

"(2) Members of the Committee shall be entitled to receive compensation at a rate to be fixed by the President but not in excess of the maximum rate of pay for grade GS-18, as provided in the General Schedule under section 5332 of title V of the United States Code.

QUORUM

"(d) Five members of the Committee shall constitute a quorum, and official actions of the Committee shall be taken only on the affirmative vote of at least five members. A special panel composed of one or more members upon order of the Committee shall conduct any hearing authorized by this section and submit the transcript of such hearing to the entire Committee for its action thereon.

RULES

"(e) The Committee is authorized to make such rules as are necessary for the orderly transaction of its business.

MANDATES

The Legislative mandate of this Committee includes Sections 304(b), 306, and 307 of PL 92-500 which require ES&WQIAC to provide, assess, and evaluate additional scientific and technical information with regard to industrial point source discharges, and toxic effluents, and transmit this information to the Administrator to aid in the decision making process. Extracts of these Sections of the Law are included here:

EFFLUENT
LIMITATION
GUIDELINES,
PUBLICATION

"(b) For the purpose of adopting or revising effluent limitations under this Act the Administrator shall, after consultation with appropriate Federal and State agencies and other interested persons, publish within one year of enactment of this title, regulations, providing guidelines for effluent limitations, and, at least annually thereafter, revise, if appropriate, such regulations. Such regulations shall—

"(1)(A) identify, in terms of amounts of constituents and chemical, physical, and biological characteristics of pollutants, the degree of effluent reduction attainable through the application of the best practicable control technology currently available for classes and categories of point sources (other than publicly owned treatment works); and

"(B) specify factors to be taken into account in determining the control measures and practices to be applicable to point sources (other than publicly owned treatment works) within such categories or classes. Factors relating to the assessment of best practicable control technology currently available to comply with subsection (b)(1) of section 301 of this Act shall include consideration of the total cost of application of technology in relation to the effluent reduction benefits to be achieved from such application, and shall also take into account the age of equipment and facilities involved, the process employed, the engineering aspects of the application of various types of control techniques, process changes, non-water quality environmental impact (including energy requirements), and such other factors as the Administrator deems appropriate;

"(2)(A) identify, in terms of amounts of constituents and chemical, physical, and biological characteristics of pollutants, the degree of effluent reduction attainable through the application of the best control measures and practices achievable including treatment techniques, process and procedure innovations, operating methods, and other alternatives for classes and categories of point sources (other than publicly owned treatment works); and

"(B) specify factors to be taken into account in determining the best measures and practices available to comply with subsection (b)(2) of section 301 of this Act to be applicable to any point source (other than publicly owned treatment works) within such categories or classes. Factors relating to the assessment of best available technology shall take into account the age of equipment and facilities involved, the process employed, the engineering aspects of the application of various types of control techniques, process changes, the cost of achieving such effluent reduction, non-water quality environmental impact (including energy requirements), and such other factors as the Administrator deems appropriate; and

"(3) identify control measures and practices available to eliminate the discharge of pollutants from categories and classes of point sources, taking into account the cost of achieving such elimination of the discharge of pollutants.

"NATIONAL STANDARDS OF PERFORMANCE

DEFINITIONS

"Sec. 306. (a) For purposes of this section:

"(1) The term 'standard of performance' means a standard for the control of the discharge of pollutants which reflects the greatest degree of effluent reduction which the Administrator determines to be achievable through application of the best available demonstrated control technology, processes, operating methods, or other alternatives, including, where practicable, a standard permitting no discharge of pollutants.

"(2) The term 'new source' means any source, the construction of which is commenced after the publication of proposed regulations prescribing a standard of performance under this section which will be applicable to such source, if such standard is thereafter promulgated in accordance with this section.

"(3) The term 'source' means any building, structure, facility, or installation from which there is or may be the discharge of pollutants.

"(4) The term 'owner or operator' means any person who owns, leases, operates, controls, or supervises a source.

"(5) The term 'construction' means any placement, assembly, or installation of facilities or equipment (including contractual obligations to purchase such facilities or equipment) at the premises where such equipment will be used, including preparation work at such premises.

SOURCES, CATEGORY LIST, PUBLICATION

"(b)(1)(A) The Administrator shall, within ninety days after the date of enactment of this title publish (and from time to time thereafter shall revise) a list of categories of sources, which shall, at the minimum, include:

"pulp and paper mills;
"paperboard, builders paper and board mills;
"meat product and rendering processing;
"dairy product processing;
"grain mills;
"canned and preserved fruits and vegetables processing;
"canned and preserved seafood processing;
"sugar processing;
"textile mills;
"cement manufacturing;
"feedlots;
"electroplating;
"organic chemicals manufacturing;
"inorganic chemicals manufacturing;
"plastic and synthetic materials manufacturing;
"soap and detergent manufacturing;
"fertilizer manufacturing;
"petroleum refining;
"iron and steel manufacturing;
"nonferrous metals manufacturing;
"phosphate manufacturing;
"steam electric powerplants;
"ferroalloy manufacturing;
"leather tanning and finishing;
"glass and asbestos manufacturing;
"rubber processing; and
"timber products processing.

FEDERAL STANDARDS OF PERFORMANCE, PUBLICATION OF REGULATIONS

"(B) As soon as practicable, but in no case more than one year, after a category of sources is included in a list under subparagraph (A) of this paragraph, the Administrator shall propose and publish regulations establishing Federal standards of performance for new sources within such category. The Administrator shall afford interested persons an opportunity for written comment on such proposed regulations. After considering such comments, he shall promulgate, within one hundred and twenty days after publication of such proposed regulations, such standards with such adjustments as he deems appropriate. The Administrator shall, from time to time, as technology and alternatives change, revise such standards following the procedure required by this subsection for promulgation of such standards. Standards of performance, or revisions thereof, shall become effective upon promulgation. In establishing or revising Federal standards of performance for new sources under this section, the Administrator shall take into consideration the cost of achieving such effluent reduction, and any non-water quality environmental impact and energy requirements.

SECTION 306
CONTINUED

"(2) The Administrator may distinguish among classes, types, and sizes within categories of new sources for the purpose of establishing such standards and shall consider the type of process employed (including whether batch or continuous).

"(3) The provisions of this section shall apply to any new source owned or operated by the United States.

STANDARDS OF
PERFORMANCE

STATE
ENFORCEMENT
PROCEDURE

"(c) Each State may develop and submit to the Administrator a procedure under State law for applying and enforcing standards of performance for new sources located in such State. If the Administrator finds that the procedure and the law of any State require the application and enforcement of standards of performance to at least the same extent as required by this section, such State is authorized to apply and enforce such standards of performance (except with respect to new sources owned or operated by the United States).

"(d) Notwithstanding any other provision of this Act, any point source the construction of which is commenced after the date of enactment of the Federal Water Pollution Control Act Amendments of 1972 and which is so constructed as to meet all applicable standards of performance shall not be subject to any more stringent standard of performance during a ten-year period beginning on the date of completion of such construction or during the period of depreciation or amortization of such facility for the purposes of section 167 or 169 (or both) of the Internal Revenue Code of 1954, whichever period ends first.

68A STAT. 51;
85 STAT. 508.
26 USC 167, 169.

"(e) After the effective date of standards of performance promulgated under this section, it shall be unlawful for any owner or operator of any new source to operate such source in violation of any standard of performance applicable to such source.

"TOXIC AND PRETREATMENT EFFLUENT STANDARDS

PROPOSED
EFFLUENT
STANDARD

80 STAT. 383.

"SEC. 307. (a) (1) The Administrator shall, within ninety days after the date of enactment of this title, publish (and from time to time thereafter revise) a list which includes any toxic pollutant or combination of such pollutants for which an effluent standard (which may include a prohibition of the discharge of such pollutants or combination of such pollutants) will be established under this section. The Administrator in publishing such list shall take into account the toxicity of the pollutant, its persistence, degradability, the usual or potential presence of the affected organisms in any waters, the importance of the affected organisms and the nature and extent of the effect of the toxic pollutant on such organisms.

"(2) Within one hundred and eighty days after the date of publication of any list, or revision thereof, containing toxic pollutants or combination of pollutants under paragraph (1) of this subsection, the Administrator, in accordance with section 553 of title 5 of the United States Code, shall publish a proposed effluent standard (or a prohibition) for such pollutant or combination of pollutants which shall take into account the toxicity of the pollutant, its persistence, degradability, the usual or potential presence of the affected organisms in any waters, the importance of the affected organisms and the nature and extent of the effect of the toxic pollutant on such organisms, and he shall publish a notice for a public hearing on such proposed standard to be held within thirty days. As soon as possible after such hearing, but not later than six months after publication of the proposed effluent standard (or prohibition), unless the Administrator finds, on the record, that a modification of such proposed standard (or prohibition) is justified based upon a preponderance of evidence adduced at such hearings, such standard (or prohibition) shall be promulgated.

HEARING

REVISED
EFFLUENT
STANDARD

"(3) If after a public hearing the Administrator finds that a modification of such proposed standard (or prohibition) is justified, a revised effluent standard (or prohibition) for such pollutant or combination of pollutants shall be promulgated immediately. Such standard (or prohibition) shall be reviewed and, if appropriate, revised at least every three years.

"(4) Any effluent standard promulgated under this section shall be at that level which the Administrator determines provides an ample margin of safety.

"(5) When proposing or promulgating any effluent standard (or prohibition) under this section, the Administrator shall designate the category or categories of sources to which the effluent standard (or prohibition) shall apply. Any disposal of dredged material may be included in such a category of sources after consultation with the Secretary of the Army.

EFFECTIVE
DATE

"(6) Any effluent standard (or prohibition) established pursuant to this section shall take effect on such date or dates as specified in the order promulgating such standard, but in no case more than one year from the date of such promulgation.

"(7) Prior to publishing any regulations pursuant to this section the Administrator shall, to the maximum extent practicable within the time provided, consult with appropriate advisory committees, States, independent experts, and Federal departments and agencies.

SUMMARY OF ES&WQIAC BACKGROUND AND ACTIVITIES

Origin

The Effluent Standards and Water Quality Information Advisory Committee (ES&WQIAC) is a statutory Committee established under Section 515 of PL 92-500.

Members and Staff Support

PL 92-500, the "Federal Water Pollution Control Act Amendment", was enacted in October 1972. The ES&WQIAC Members were appointed on February 3, 1973 for a four year term - which can be renewed. The Committee is composed of a chairman and eight members. Staff support is provided by the Environmental Protection Agency.

Function

The role of the Committee is to provide, assess, and evaluate scientific and technical information for the Administrator of EPA to assist in development of industrial effluent limitations. The Committee has undertaken an active role in fulfilling its responsibilities under PL 92-500.

First Year Activities, March 2, 1973-March 1, 1974

In its first year of effort the ES&WQIAC conducted 60 Industrial Workshops, 7 Public Hearings, and 15 Committee Meetings. It provided detailed comments on an extensive series of technical documents and proposed effluent limitations related to the initial 27 basic industries specified in PL 92-500, and proposed a new approach for developing effluent limitations for industrial point source discharges. In addition the Committee developed data formats for information acquisition from industry and received and transmitted more than 320 communications to EPA regarding establishment of effluent limitations. Under its responsibilities on toxic substances the Committee: conducted special hearings; developed extensive lists of materials proposed for inclusion in the original toxic substances list by EPA; prepared a comprehensive bibliography of reference material on toxic substances and provided a position paper for EPA on toxic substances regulations. (Details are provided in the Committee's First Annual Report covering the period March 2, 1973 to March 1, 1974.)

Preceding page blank

Second Year Activities, March 2, 1974-March 1, 1975

In the Committees second year of operation March 2, 1974-March 1, 1975 a comprehensive Work Plan was developed covering 10 key areas of Committee activity. The Committee held 5 public meetings and 40 industrial workshops to obtain technical information for assisting EPA in developing industrial effluent limitations. The Committee also provided comments and recommendations on 56 documents and rule making packages developed by EPA for establishing industrial effluent limitations.

In April at the request of the House committee on Public Works, the Committee provided comments on Problems in Implementation of The Federal Water Pollution Control Act.

Special information gathering conferences were planned or conducted to facilitate exchange of technical information. In November 1974 the Committee sponsored an interagency conference to determine the quantity and quality of technical information derived by EPA in establishing industrial effleunt limitations. As a result of this conference, recommendations were made to the EPA Administrator for improvement in utilization of these resources.

A special task force was constituted in December 1974 to review and provide recommendations to EPA on a newly proposed approach to developing Toxic Substance limitations.

In February 1975 the Committee undertook planning and organization of a special conference on radioactive wastes.

MEMBERSHIP

In accordance with Section 515 of PL 92-500, the EPA Administrator is required to appoint a chairman and eight members to ES&WQIAC. These individuals were selected from the scientific community, "qualified by education, training, and experience..." The following members have served on ES&WQIAC since its inception:

CHAIRMAN:

Dr. Martha Sager is Professor and Director of the Environmental Systems Management Program within the Center for Technology and Administration, College of Public Affairs, American University, Washington, D.C. She also serves as an environmental management consultant, is a member of the Department of Commerce's Technical Advisory Board and Sulfur Dioxide, Panel on Technology of SO_2 Removal, and the National Academy of Science Advisory Committee to the National Bureau of Standards on Air and Water Quality Measurements. Dr. Sager, has been a guest speaker, panel chairman and contributing author at conferences, environmental professional seminars, symposia and industrial meetings. She holds B.S. and M.S. degrees from the University of Maryland, College Park, and received her Ph.D. degree in ecology and invertebrate zoology from the Catholic University of America, Washington, D.C. Various lectures and other activities performed by Dr. Sager in her capacity as ES&WQIAC chamirman are listed in the appendix of this annual report.

MEMBERS:

Mr. Don E. Bloodgood, Professor Emeritus of Sanitary Engineering at Purdue University, West Layfayette, Ind., is a consultant to government and industry on problems of industrial and municipal wastes and waste treatment. Professor Bloodgood, author of more than 130 articles on wastes and waste treatment, is a graduate of the University of Wisconsin, where he received a B.S. in civil engineering specializing in sanitary engineering, and a C.E. degree. He is a former member of the Board of Trustees of the American Public Works Association, a former member of the Sanitary Engineering Committee of the American Society of Engineering Education, past president of both the Central States Sewage Works Association and the Indiana Sewage Works Association, and past director-at-large of the Water Pollution Control Federation. Mr. Bloodgood has been the recipient of various professional awards, including three from WPCF.

Mr. Blair Bower is a private consultant and a lecturer in environmental planning and management at the University of North Carolina. Mr. Bower, who also is a consultant to state and international government agencies, formerly was Associate Director of the Quality of Environment program of Resources for the Future, Inc., Washington, D.C.

Preceding page blank

Mr. William W. Eckenfelder, Jr. is Distinguished Professor of Environmental and Water Resources Engineering at Vanderbilt University, Nashville, Tenn. An expert on biological treatment of sewage and industrial wastes, he serves as a consultant to both government and industry. He is a member of the Water Pollution Control Federation, the American Chemical Society, the American Institute of Chemical Engineers, the American Society of Civil Engineers, and the International Association of Water Pollution Research, among others. Professor Eckenfelder, who has authored over 100 professional papers and books, received a B.C.E. degree from Manhattan College, and M.S. degree in sanitary engineering from Pennsylvania State University, and an M.C.E. degree in sanitary engineering from New York University.

Dr. Robert Grieves, Professor and Chairman of the Department of Chemical Engineering, University of Kentucky, Lexington, also is Director of the Kentucky Water Resources Research Institute, one of several institutes created by the Water Resources Research Act (PL 88-379). The author of over 100 professional papers, Dr. Grieves is an expert in industrial water and waste treatment, physical-chemical waste treatment processes, and physical and chemical separations. He is a member of the American Institute of Chemical Engineers and Water Pollution Control Federation, has presented papers and participated in meetings and symposia of a range of professional societies and conferences including AICHE and the Intersociety Conference on Environmental Systems. Dr. Grieves is a member of Phi Beta Kappa, Tau Beta Pi and Sigma Xi, holds a B.A. in Russian, and an M.S. and Ph.D. in chemical engineering from Northwestern University, Evanston, Ill. During the past year, he has presented papers and participated in meetings, symposia of AIChE in Salt Lake City and Washington and the Intersociety Conference on Environmental Systems in Seattle.

Mr. Robert McCall is the Director of Environmental Health Services, West Virginia State Department of Health, Charleston. He is the 1974-75 chairman of the Conference of State Sanitary Engineers and past president of both the Conference of Federal Sanitary Engineers and the West Virginia Sewage and Industrial Waste Association. Mr. McCall is a member of various other professional organizations, including the American Public Health Association, the Federation of Water Pollution Association, and the American Academy of Environmental Engineers of which he is a Diplomate. Between 1958 and 1968, he served as consultant for environmental health engineering to the Surgeon General, Department of the Army, and between 1960 and 1966, he was the U.S. member of the Medical Ad Hoc Committee on American-British-Canadian-Australian Army Water Potability Standards. Mr. McCall received a B.S.C.E. degree from West Virginia University and an M.S.S.E. degree from the University of North Carolina.

Dr. Glenn Paulson is the Assistant Commissioner for Science of the New Jersey Department of Environmental Protection. He is a member of the American Public Health Association's Committee on Occupational Safety and Health, and is a member of various other Professional societies, including the American Association for the Advancement of Science, the American Chemical Society, the Scientists' Institute for Public Information, and the Water Pollution Control Federation. During 1972, Dr. Paulson was a member of a study team working under the National Academy of Sciences' Study Committee on the Environment Aspects of a National Materials Policy. Formerly a staff scientist with the Natural Resources Defense Council, Dr. Paulson received a B.A. degree in chemistry, with honors, from Northwestern University, Evanston, Ill., and a Ph.D. degree from the Rockefeller University, New York. In 1972, Dr. Paulson received an Honorary Doctor of Science degree from Long Island University.

Dr. Lloyd L. Smith, Jr., is Professor of Entomology, Fisheries, and Wildlife, University of Minnesota, St. Paul. He has served as chairman of the ORSANCO Aquatic Life Advisory Committee and president of the American Fisheries Society. Dr. Smith has served on the National Academy of Sciences' panels on acid mine drainage and water quality criteria and on the National Water Commission's panel on water quality. He is a member of the American Society of Limnology and Oceanography, the Water Pollution Control Federation, and American Fisheries Society. He is past president and has served as editor of the Fisheries Society. Dr. Smith, who received a B.A. degree from the University of Minnesota, and M.A. and Ph.D. degrees from the University of Michigan, is the author of over 80 papers relating to population, stream, water quality and economic problems of fisheries. During the past year, he presented a paper at the International Association of Water Pollution Research meeting in Paris, France.

Mr. Ramon Guzman is a consultant and an expert in industrial wastewaters, environmental engineering, and water supply and treatment. He also is a Lieutenant Commander in the U.S. Public Health Service, and serves as chairman of the Board of Examiners of Engineers, Architects, and Surveyors of the Commonwealth of Puerto Rico. Previously, Mr. Guzman was chief sanitary engineer of the Puerto Rico Aqueduct and Sewer Authority and special assistant for sanitary engineering, U.S. Navy. He is a member of various professional organizations, including the American Academy of Environmental Engineers, the Water Pollution control Federation, the American Water Works Association, the American Institute of Chemical Engineers, and the Conference of Federal Sanitary Engineers. The author of several articles which have appeared in professional journals, Mr. Guzman holds a B.S. degree in chemical engineering from the University of Puerto Rico and M.S. degree in sanitary engineering from the University of Michigan.

EXECUTIVE DIRECTOR:

Mr. Martin Brossman, the full time Executive Director for ES&WQIAC, formerly a technical and management consultant to EPA on environment, energy, and land use programs. Mr. Brossman has more than 25 years experience in key management and engineering positions and has served as a consultant to industry, government, universities and associations. He was a Principal of Planning Research Corporation (PRC) and Vice President of PRC's management consulting subsidiary. In addition to his management and consulting experience Mr. Brossman is the author of more than 40 publications in fields of environmental sciences, management, engineering R&D, program planning and evaluation, resource modeling and information systems. He is a registered professional engineer and a member of ORSA, TIMS, APS, AAAS, etc.

LEGAL COUNSEL:

Mrs. Rose M. Mattingley, legal consultant to the Committee was admitted to the bar in 1953 and has been engaged in private practice in Maryland. She has appeared before most of the local administrative agencies and has long been concerned with conservation and ecology movements. She is past Vice President and for many years counsel for local citizen associations. She is a member of the bar of Maryland and the District of Columbia, the U.S. Court of Appeals for the District of Columbia, the Court of Claims and the U.S. Supreme Court and past President of the Maryland Women's Bar Association.

OVERVIEW OF THE SECOND YEAR OF ACTIVITIES
OF THE
EFFLUENT STANDARDS AND WATER QUALITY
INFORMATION ADVISORY COMMITTEE

Legislative Basis:

The Effluent Standards and Water Quality Information Advisory Committee (ES&WQIAC) was established by the Federal Water Pollution Control Act Amendments of 1972 (Public Law 92-500) to assist the Environmental Protection Agency in carrying out part of its mandate under the Act.

Specifically, ES&WQIAC is required to provide, assess, and evaluate scientific and technical information regarding industrial point source discharges and toxic effluents. Such information is then transmitted to the EPA Administrator to aid in the Agency's decision making process.

Basic to the Committees mandate under PL 92-500 are; Section 515 which established the Committee, and Section 304(b)--Information and Guidelines, Section 306--National Standards of Performance, and Section 307--Toxic and Pretreatment Effluent Standards.

During the second year of operation, the ES&WQIAC was involved in analyzing and critiquing EPA's work on the Phase II industries.

1. Auto and Other Laundries
2. Coal Mining
3. Converted Paper Products
4. Fish Hatcheries and Farms
5. Fruits and Vegetables
6. Miscellaneous Chemicals Manufacturing

Preceding pages blank

7. Miscellaneous Foods and Beverages
8. Mineral Mining and Processing
9. Oil and Gas Extraction
10. Ore Mining and Dressing
11. Paint and Ink Formulating and Printing
12. Paving and Roofing Materials
13. Steam Supply
14. Transportation
15. Water Supply

As part of this effort, two sets of workshops were held in July and August 1974. These workshops and the Committee meetings which were held at various times throughout the year afforded the public and industry the opportunity to discuss the development of effluent limitations in a nonadversary environment.

In keeping with Section 515 which authorized the Committee to "avail itself of the technical and scientific services of any Federal agency," ES&WQIAC arranged a conference with representatives from other agencies to locate pertinent expertise within the Federal Government which could provide an additional resource which EPA and ES&WQIAC could utilize during the lengthy process of effluent limitations development. The major achievement of the conference was the discovery of previously untapped sources of scientific and technical information from over 45 sources in departments and agencies.

In addition to its involvement with the standards themselves, ES&WQIAC continued to work on the matrix method, a mathematical approach for developing effluent limitations.

This method presents an alternative to the contractor method now employed by EPA, and was proposed by ES&WQIAC in 1973. Further work on the matrix method has been undertaken at Vanderbilt University and a report is scheduled for October, 1975.

On-going liaison with Congress also has been an integral part of ES&WQIAC's activities. As PL 92-500 moved into its third year, the House Public Works Subcommittee on Investigations and Review held oversight hearings to investigate problems and learn how much progress was being made in administering this law. At the request of Subcommittee Chairman James C. Wright Jr. of Texas, ES&WQIAC submitted testimony which included a report on ES&WQIAC's activities and statements by some of ES&WQIAC's members.

ES&WQIAC has also been in communication with the Senate Public Works Committee. Its chairman, Senator Jennings Randolph, requested the ES&WQIAC chairman to submit quarterly reports on the activities of ES&WQIAC. The first such report was submitted during Spring of 1975.

Complete files on all of the subject areas discussed in this report, tapes and minutes of Committee meetings, and other information references are available in the ES&WQIAC files.

LEGAL ACTIVITIES

During its second year of operation, ES&WQIAC has had legal counsel available on a consultant basis, and one of the objectives of this activity has been to advise members of the status of lawsuits challenging limitations/guidelines promulgated under Sections 301 and 304(b) of PL 92-500. The following summarizes some of the litigation and a discussion of the implications.

More than 130 cases were filed by industry in federal courts, and most of these were filed in Circuit Courts of Appeal. Section 509 of PL 92-500 provides that certain sections of the law, including Section 301 but not Section 304(b), are to be appealed in a Federal Circuit Court. There are 10 circuits geographically distributed throughout the U.S. In cases where the law gives no directive, the Administrative Procedure Act governs appeals, and these appeals are filed in Federal District Courts, of which each state has at least one.

EPA has stated that it promulgated guidelines/limitations under Sections 301 and 304(b) and thus appeals must be made to the Circuit Courts exclusively, and must be filed within 90 days of promulgation under these sections. This contention of EPA has been disputed in many courts and has been unsuccessfully disputed in a case filed by E.I. du Pont de Nemours Company in the District Court for the Western District of Virginia (No. 74-57), and in one filed by the

Preceding page blank

American Paper Institute in the District of Columbia District Court (No. 74-814). It is also being disputed in cases pending in most of the Circuit Courts of Appeal.

Until a petitioner files his brief, nothing is known of the substance of the appeal. After the notice of appeal is filed, EPA compiles and files the record (6,000 pages in NO. 74-1261 in the Fourth Circuit), and then the petitioner's brief is filed. Many cases pending involving the same regulation are consolidated for trial. For example, 11 cases concerning inorganic chemicals were consolidated in the Fourth Circuit with No. 74-1261, filed by duPont. A joint brief was filed arguing the jurisdictional issues common to all, and each petitioner filed a separate brief on its product. Cases involving "new plants" or "new sources" under Section 306 (which do not present jurisdictional issues, as Section 306 is specifically included in the list in Section 509 directing review in the Circuit Courts of Appeal) may be consolidated with those under 304(b).

ES&WQIAC believes that it is likely that the issue will eventually go to the Supreme Court for resolution. If the courts agree that EPA proceeded properly, matters will go forward as in the past. However, if the guidelines are ruled not to be limitations, EPA may be forced to begin again, and accept the definition that the limitation refers to the number and the guidelines refer to the method.

In addition to the jurisdictional issue, each industry has its own problems peculiar to its operations, and challenges EPA on the decisions embodied in the promulgated regulations. A pattern emerges of protests of lack of sufficient data upon which to base decisions, lack of a reasoned rationale for decision, misuse of the "exemplory plant" concept, inadequate subcategorization, rigidity of a single number limitation and similar differences which ES&WQIAC has pointed out to the Administrator in numerous comments since the Committee's inception.

ES&WQIAC WORKSHOPS

During its second year of operation, ES&WQIAC held workshops in July and August for the purpose of acquiring scientific and technical information to help improve the development of effluent limitations. Through the workshop concept, ES&WQIAC has been able to develop an information exchange which encourages the free-flow of ideas on all aspects of industrial waste treatment. As a result, the Committee can more effectively carry out its mandate of of advising EPA.

The first set of workshops was conducted during the week of July 8-12, 1974. The industrial problems discussed were animal feed, asbestos manufacturing, auto and other laundries, breakfast cereal and wheat starch, cane sugar, canned and preserved fruits and vegetables, canned and preserved seafood processing, coal mining, converted paper products, electroplating, ferroalloys, fertilizer, fish hatcheries and farms, inorganic chemical products, iron and steel, machinery and mechanical, meat and poultry processing, mineral mining and processing, miscellaneous chemicals, miscellaneous food and beverages, offsite rendering, ore mining and dressing, organic chemicals, other nonfertilizer phosphates, paint and ink, paving and roofing materials, petroleum and gas, plastics and synthetics, pottery, etc., pulp and paper, pressed and

Preceding page blank

blown glass, steam supply, textile, friction materials, and sealing devices, timber products and furniture manufacturing, transportation, and water supply.

The workshops, held August 12 and 13, discussed the machinery and mechanical, miscellaneous food and beverages, ore mining and dressing, and water supply industry problems.

The table on the next few pages shows the industry discussed at each workshop, the ES&WQIAC member who chaired the workshop, the EPA project officer and branch chief, and the name of the EPA contractor. Following the table are several items which appeared in the Environmental Reporter, published by the Bureau of National Affairs, Inc., Washington, D.C. These items resulted from news coverage of the ES&WQIAC workshops by BNA staff reporters, S. Gale Battista and Linda Ba Thung. The reports provide some insight on the nature and content of ES&WQIAC Workshops.

ES&WQIAC Workshops, July and August 1974

Date	Industry	ES&WQIAC Member	Project Officer	Branch Chief	Contractor
July 8	Fertilizer	Dr. Paulson	Elwood Martin	Walter Hunt	Davy Powergas Inc.
July 8	Inorganic Chemical Products	Mr. Eckenfelder	Elwood Martin	Walter Hunt	General Technologies Corporation
July 8	Offsite Rendering; Meat and Poultry Processing	Mr. Bloodgood	Jeffery Denit	John Riley	North Star Research Institute
July 8	Pressed and Blown Glass	Dr. Paulson	Bob Dellinger	John Riley	Sverdrup & Parcel & Associates Inc.
July 8	Animal Feed; Breakfast Cereal and Wheat Starch	Mr. Bloodgood		John Riley	Sverdrup & Parcel & Associates Inc.
July 8	Organic Chemicals	Mr. Eckenfelder	John Nardella	Walter Hunt	Roy F. Weston, Inc. West Chester, Pa.
July 8	Asbestos Mfgr.; Textile, Friction Materials and Sealing Devices	Mr. Gurman and Mr. Bloodgood	Dick Gregg Jim Gallup	John Riley	Sverdrup & Parcel & Associates Inc.

ES&WQIAC Workshops (cont.)

Date	Industry	ES&WQIAC Member	Project Officer	Branch Chief	Contractor
July 9	Auto and Other Laundries	Dr. Sager	Bill Renfroe	Hal Coughlin	National Field Investigation Center Cincinnati
July 9	Canned and Preserved Fruits and Vegetables	Mr. Guzman	Jim Gallup	John Riley	SCS Engineers
July 9	Miscellaneous Food and Beverages	Mr. Eckenfelder	Dick Watkins	John Riley	Environmental Science & Engineering, Inc.
July 9	Mineral Mining and Processing	Dr. Smith	Mike Kosakowsky	Hal Coughlin	Versar, Inc. Springfield, Va.
July 9	Water Supply	Dr. Sager	Martin Halper	Walter Hunt	Southeast Research Corporation
July 9	Ore Mining and Dressing	Dr. Smith	Bill Renfroe	Hal Coughlin	Calspan Corporation
July 9	Transportation	Mr. Bloodgood	Bill Renfroe	Hal Coughlin	National Field Investigation Center Cincinnati

ES&WQIAC Workshops (cont.)

Date	Industry	ES&WQIAC Member	Project Officer	Branch Chief	Contractor
July 9	Fish Hatcheries	Dr. Paulson	Woody Forsht	John Riley	National Field Investigation Center, Denver
July 10	Paving and Roofing Materials	Dr. Smith	David Becker	Walter Hunt	National Field Investigation Center Cincinnati
July 10	Paint and Ink; Formulation and Printing	Mr. Eckenfelder	John Nardella	Walter Hunt	National Field Investigation Center Denver
July 10	Miscellaneous Chemicals	Mr. Guzman	Unassigned	Walter Hunt	Roy F. Weston, Inc. West Chester, Pa.
July 10	Machinery and Mechanical	Mr. Bloodgood	John Newbrough	Hal Coughlin	Hamilton Standard Conn.
July 10	Coal Mining	Dr. Smith	Matt Jarrett	Hal Coughlin	Skelly & Loy Engineers & Consultants
July 10	Pottery, etc.	Dr. Paulson	Bill Hancuff	Hal Coughlin	Versar

ES&WQIAC Workshop (cont.)

Date	Industry	ES&WQIAC Member	Project Officer	Branch Chief	Contractor
July 10	Petroleum and Gas Extraction	Mr. Eckenfelder	Martin Halper	Walter Hunt	EPA Task Force
July 10	Steam Supply	Mr. Bloodgood	Charles Nichols	Walter Hunt	Roy F. Weston, Inc. West Chester, Pa.
July 11	Converted Paper Products	Mr. Bloodgood	Craig Vogt	John Riley	National Field Investigation Center Dever
July 11	Rubber Processing	Dr. Smith	John Riley	John Riley	Roy L. Weston, Inc. West Chester, Pa.
July 11	Pulp and Paper	Dr. Paulson	Craig Vogt	John Riley	Wapora, Inc.
July 11	Electroplating	Mr. Guzman	Kit Krickenberger	Walter Hunt	Battelle's Columbus Laboratories Columbus, Ohio
July 11	Ferroalloys; Iron and Steel	Dr. Paulson Dr. Smith	Patricia Diercks Edward Dulaney	Walter Hunt	Datagraphics, Inc. Cyriss William Rice Inc., Division NUS Corporation

ES&WQIAC Workshops (cont.)

Date	Industry	ES&WQIAC Member	Project Officer	Branch Chief	Contractor
July 11	Timber Products and Furniture Manufacturing	Mr. Bloodgood	Dick Williams	Hal Coughlin	Environmental Science and Engineering, Inc. Gainsville, Florida
July 11	Canned and Preserved Seafood Processing	Mr. Gusman	Woody Forsht	John Riley	Environmental Associates, Inc.
July 12	Plastics and Synthetics	Mr. Eckenfelder	David Becker	Walter Hunt	Arthur D. Little, Inc., Cambridge, Mass.
July 12	Other Nonfertilizer Phosphates	Dr. Smith	Elwood Martin	Walter Hunt	Davy Powergas Inc.
July 12	Cane Sugar	Mr. Gusman	Bob Dellinger	John Riley	Environmental Science & Engineering, Inc.
July 12	Nonferrous Metals	Mr. Bloodgood	George Thompson	Walter Hunt	Battelle's Columbus Laboratories Columbus, Ohio

ES&WQIAC Workshops (cont.)

Date	Industry	ES&WQIAC Member	Project Officer	Branch Chief	Contractor
August 12	Miscellaneous Food and Beverages (Beverages)	Dr. Paulson and Mr. Eckenfelder	Dick Watkins	John Riley	Environmental Science and Engineering, Inc. Gainsville, Florida
August 12	Ore Mining and Dressing	Dr. Smith	Bill Renfroe	Hal Coughlin	Calspan
August 13	Miscellaneous Food and Beverages (Fats and Oils)	Dr. Grieves	Dick Watkins	John Riley	Environmental Science and Engineering, Inc. Gainsville, Florida
August 13	Water Supply	Mr. McCall	Martin Halper	Walter Hunt	Southern Research
August 13	Miscellaneous Food and Beverages (Specialties)	Mr. Guzman	Dick Watkins	John Riley	Environmental Science and Engineering, Inc. Gainsville, Forida
August 13	Machinery and Mechanical	Mr. Bloodgood	John Newbrough	Hal Coughlin	Hamilton Standards

EXAMPLES OF ES&WQIAC INDUSTRY WORKSHOPS

The following extracts from the Environmental Reporter illustrate the nature and content of ES&WQIAC Workshops.

Water Pollution

EPA ADVISORY COMMITTEE HOLDS MEETINGS TO GATHER DATA ON EFFLUENT LIMITATIONS

Workshops designed to gather information from various industries for effluent guidelines limitations under consideration were held by the Environmental Protection Agency's Effluent Standards and Water Quality Information Advisory Committee July 8-12.

The workshops were held on several industries designated as Group I, Phase II industries and as Group II industries by EPA.

Group I industries are those which are specifically identified in the 1972 Federal Water Pollution Control Act Amendments. EPA was mandated to establish effluent limitations for these industries. Subcategories of these industries are identified in phases. EPA is required to establish effluent limitations for an additional group of industrial categories – Group II – as a result of a suit brought against EPA by the Natural Resources Defense Council (6 ERC 1033).

Asbestos

The cost of complying with the recommended best available control technology for the solvent recovery subcategory of the asbestos manufacturing industry was criticized at EPA's workshop.

Sverdrup and Parcel and Associates, Inc., in a draft contractor's document, recommended that best available control technology (BAT) for solvent recovery be achieved through adsorption on activated carbon. Specifically, through the activated carbon process, chemical oxygen demand would be reduced to five milligrams per liter (mg/l), suspended solids would be reduced to 5 mg/l, and pH would be reduced to three to nine units.

An economic analysis prepared by Arthur D. Little, Inc., Cambridge, Mass., concluded that it would cost an average of $250 per pound of removal to comply with the recommended best available technology.

The validity of spending such an amount to gain relatively minor benefits was questioned by R. T. Gregg, project manager for Group I, Phase II of the asbestos manufacturing industry, in EPA's effluent guidelines division, and by Ramon Guzman, a member of the advisory committee.

Guzman told Environment Reporter that compliance with the recommended best practicable technology (BPT) would achieve a 95 percent reduction in pollution. It is not worth the extra expenditures which would be necessary to achieve a 99.8 percent reduction in pollution under best available technology, he contended. The recommended best practicable technology for solvent recovery is 50 mg/l for COD, 30 mg/l for suspended solids, and three to nine units for pH. This control would be achieved by biological treatment.

Richard S. Stevenson, an economist with EPA, said the standard is economically achievable because no plant closures are expected. Plants which will have to use the adsorption on activated carbon process will have to increase price of goods by only two percent.

The remainder of the recommended standards did not create any conflict. The standards covered the subcategories of textile coating, vapor absorption, and wet dust collection for the textile, friction materials, and sealing devices segments of the industry.

For vapor absorption, the recommended standards for best practicable technology would be 50 mg/l for COD, 30 mg/l for suspended solids, and six to nine units for pH. Control would be achieved by sedimentation. The recommended standard for both best available technology and standards of performance for new sources would be zero discharge. Control would be achieved by replacement of wet scrubbers with bag-house operations.

EPA plans to propose effluent limitation guidelines for these subcategories of the asbestos manufacturing industry in August.

Machinery, Mechanical

Industry should be allowed to work directly for the 1983 requirements for best available technology under a compliance schedule rather than having to make capital expenditures to meet the 1977 requirements for best practicable technology and the 1983 requirements, according to T. H. Goodgame, Whirlpool Corporation, Benton Harbor, Mich.

Goodgame's comment was made during a workshop on the machinery and mechanical products manufacturing industry. The industry is classified as a Group II industrial category by EPA. A contractor's report on the industry is expected in February 1975.

Goodgame said the Act does not consider economics properly in requiring a two-phase route in all instances because compliance with the 1977 requirements often does not lead down the road to the 1983 requirements. Meeting the 1977 requirements can be a waste of money if the technology required for BPT is entirely different than that required for BAT in 1983, he said.

Mineral Mining, Processing

The draft technical report for the mineral mining and processing industry was recently begun by Versar, Inc., Springfield, Va., and was not expected to be completed until November. An economic analysis of the impact of effluent limitations on the industry is being prepared by Arthur D. Little. The two firms plan to meet at the end of July to discuss subcategorization of the industry.

Because of the lack of availability of the contractor's report, the workshop focused on basic parameters within the industry.

Representatives of the industry attending the workshop concluded that water use and flow can be determined only by looking at specific sites of operations and at specific geographical areas.

Spokesmen from the stone mining segment of the industry said recycling could be accomplished except when there are dredging operations or operations in the middle of a water body, but a spokesman for titanium mineral mining said recycling would not be economically practical. Further, the spokesman said, recycling would not significantly reduce the quantity of effluents and the quality of discharge already is "satisfactory."

A spokesman for the gypsum and lime stone mining segment said there may be difficulty in removing water from mines before operations even begin if the mine is located in an area with significant rainfall. While a range for the amount of rainfall which is used can be defined fairly easily, a range for runoff or rainwater could range from almost zero to the size of a river, he said.

In discussing raw waste loads, a spokesman for the phosphate mining segment said suspended solids are the major problem. However, he added, these solids should be controlled without requiring recycling because this process would be too costly and would produce a "net loss" effect on the river. The spokesman for the gypsum and lime stone mining segment said dissolved magnesium may be a problem.

Dissolved solids, specifically fluorides, were said to be a problem in the phosphate and sand mining segments, and biological oxygen demand can be a problem in washing beach sand, in titanium mining, and in the gypsum industry; and pH was called a controllable problem in the titanium industry. Other problems which can exist with pH are that some ground water has a natural pH unit of four or five, and acid wastes may enter a mining operation from coal deposits.

A spokesman for Arthur D. Little said it will be difficult to prepare an economic analysis of this industry because of the large number of small operators. The key economic impact will be on these small operators who may go out of business if mandated to put more requirements on their operations, he added.

Ore Mining, Dressing

Dr. Lloyd Smith, Jr., a member of ES&WQIAC, urged industry representatives of the ore mining and dressing point source category to provide data related to development of effluent limitations guidelines. The ore mining and dressing category is comprised of iron ores, copper ores, lead and zinc ores, gold ores, silver ores, bauxite and other aluminum ores, ferroalloy ores except vanadium, mercury ores, uranium-radium-vanadium ores, and metal ores not elsewhere classified.

No draft technical report document has been done to date. An economic analysis is being prepared by Arthur D. Little.

Dr. Smith noted specific areas where data submitted by industry could be useful, including categorization, parameters, and economic impact.

The workshop found that parameters for effluent guidelines might include total suspended solids, total dissolved solids, chemical oxygen demand, cyanide, pH, and oil and grease.

The consensus of the workshop was that technology to control total dissolved solids had not been demonstrated adequately, while technology to control total suspended solids was understood.

Ralph F. Magnuson, Jr., of Cleveland Cliffs Iron Company, Cleveland, Ohio, said that the basis for categorization for the iron ore segment depended on the availability of water.

A spokesman for the copper industry said the need for variation in subcategorization depended not only on geography, but on the differences in the mineralogical constituents.

Bernard M. Kostelnik, of The Anaconda Company, New York City, urged the committee to recommend to EPA that it do an adequate job of developing guidelines, rather than hide behind deadlines. He said industry would prefer to see rational guidelines developed, rather than become involved in time-consuming litigation. He suggested the possibility of legislative relief from the deadlines.

One industry representative noted the need to evaluate the question of additive environmental costs.

Organic Chemicals

Concern for more equitable categorization was voiced by industry representatives during a workshop held to discuss the draft development document for effluent limitations guidelines and standards of performance for the organic chemicals industry. The Phase II draft technical report, dated February 1974, was prepared under contract for EPA by Roy F. Weston, Inc.

An ES&WQIAC spokesman for the workshop noted the consensus that in developing an effluent guideline for a multi-product plant, the addition of effluent limitations for individual products in many cases does not equal the total waste water discharge from the plant. In addition, many products do not appear in Phase I or Phase II listings.

He also attributed a serious deficiency in the draft's method of categorization, based on groupings for biological oxygen demand, to the flow variation within a subcategory which could lead to unattainable effluent concentrations in some cases. The workshop recommended that categorization be considered on the basis of a flow/biological oxygen demand factor where applicable and on a plant basis for cases where effluent limitations for products are not available or where summation does not reflect accurately the waste water load.

The spokesman recommended that the chemical oxygen demand parameter not be included as BPT levels. He noted that the ratio of biological oxygen demand is highly variable between industrial streams.

F. D. Bess, of Union Carbide Corporation, in South Charleston, W. Va., said subcategorization was essentially meaningless in terms of defining raw waste load. He suggested redefining the 18 subcategories used in Phase I and II to general raw waste load ranges, based on five-day biological oxygen demand, each of which would need to cover a span of less than 2:1. Bess recommended that temperature be considered in setting effluent limitations.

Paul Hodges, of Monsanto Company, St. Louis, Mo., noted a deficiency in the analytical method used in the draft for reaching limitations for oil. He recommended that the analytical methodology be reviewed.

An EPA spokesman told the workshop that the economic impact associated with cost of treatment technology would be considered in developing the guidelines. An economic analysis is being prepared on the organic chemicals segment under contract for EPA by Arthur D. Little.

The EPA spokesman said proposed guidelines were expected after November.

Inorganic Chemicals

Industry representatives voiced concern over the categorization used in the draft development document for proposed effluent limitations guidelines and standards of performance for the significant inorganic chemicals segment of the inorganic chemicals manufacturing point source category. The draft, dated December 1973, was prepared under contract for EPA by the General Technologies Corporation.

Preparers of the draft initially divided the significant inorganic chemicals segment into categories based on compositions of the treated process waste water from plants with respect to total suspended solids and dissolved harmful materials. The draft said this method of categorization reflects differences in the nature of raw wastes generated in the manufacture of different chemicals as well as the ability to be treated.

Four categories generally accommodated the 47 chemicals of the study, the draft said, noting that factors such as process employed, raw materials used, and geographical location, in some cases, justified further segmentation of the industry. It said other factors such as product purity, water use volume, plant size, and plant age did not justify further segmentation of the industry.

The draft grouped the 47 chemicals into 49 production subcategories for the purpose of establishing effluent limitations guidelines and standards of performance for new sources.

The draft said that based on the application of BPT 24 of the 49 production subcategories (comprising 47 chemicals) under study can be operated with no discharge of process waste water pollutants to navigable waters. It said that with the BAT 41 of the 49 production subcategories could be operated with no discharge of process waste water pollutants to navigable waters.

No discharge of process waste water pollutants to navigable waters is achievable as a new source performance standard for all production subcategories except barium carbonate, calcium carbonate, chrome pigments and iron blues, lithium carbonate (Spodumene ore), stannic oxide (wet process), and sulfur dioxide, the draft said.

W.R. Taylor, manager of environmental control engineering, Diamond Shamrock Chemical Company, Cleveland, said there is no such thing as a well-defined inorganic chemical industry. He said effluent limitations guidelines should be set on a specific product basis.

Taylor noted that in some instances the guidelines proposed in the draft document called for no discharge, while the treatment proposed as exemplary generated a discharge of dissolved solids.

Lloyd Falk, of E.I. DuPont de Nemours & Company, Wilmington, Del., said the draft did not provide a rationale for application of factors in determining categorization. He criticized the draft's lack of information in explanation of benefits referred to in comparison with the costs of reducing pollutants.

Falk questioned the necessity of establishing limitations on both a maximum daily average basis and 30-day average basis.

An ES&WQIAC spokesman invited industry to provide specific documentation useful to the committee in its discussion of effluent guidelines with EPA. Specific points included data on flow volumes in comparison with the draft values, total suspended solids values as affected by flow and solubility, the effect of climate on the achievability of proposed best practicable control limitations in the draft, analysis of the proposed limitations to be achieved with best available technology, and an evaluation of the economic impact.

He noted that general conclusions required specific documentation to achieve validity.

Fertilizer Industry

EPA's contractor's draft report on the fertilizer industry subcategories of ammonium sulfate, mixed fertilizers, and blend fertilizers does not adequately represent the industry, John M. Reynolds, spokesman for the Fertilizer Institute, said July 8.

The contractor's report was prepared by Davy Powergas, Inc. The Phase II nitrogen fertilizer subcategory includes ammonium sulfate produced as both a synthetic and a coke by-product material. The Phase II phosphate fertilizer subcategory includes the mixed fertilizer and blend fertilizer materials. The report recommended zero discharge through application of best practicable control technology currently available for both the nitrogen and phosphate subcategories. EPA plans to propose effluent limitations guidelines for these segments of the industry in mid-September.

Reynolds said the report does not adequately address the wide diversity of operating practices in the fertilizer industry. The report investigated eight plants in Alabama and Illinois. Reynolds said at least 15 to 20 plants in several states should be studied to observe the variation in processes. This is important, he said, because availability of varying raw materials in different geographical areas will affect the process and thus the waste load.

Reynolds said the scrubbing system depicted by the contractor is not representative of the majority of mixed fertilizer plants. Usually, he said, the ammoniator-granulator off-gases are scrubbed in addition to the dryer and cooler off-gases. Sometimes the scrubbing is conducted in separate equipment because of the difference in temperature between the exhausts, he added.

The air emission collection and abatement control system depicted for blend plants is not representative, he said. While some plants have bag collectors installed at strategic points within the plant, it is doubtful if any facility has a system with a capability to collect all emissions, he added.

Reynolds said the contractor's estimated $89,000 investment cost for airborne control from blend plants is ridiculous considering that the total plant investment usually costs no more than $75,000-$100,000.

Thomas F. Champion, of Columbia Nitrogen Corporation, Augusta, Ga., said his firm's two mixed fertilizer plants already comply with the recommended proposals. However, Champion expressed concern that EPA is now looking at control of runoff and rainwater from ammonium nitrate plants. He said it is almost impossible to recover nitrogen from well water. Well water is used for processing in the plants.

He also cautioned that EPA, in setting guidelines with compliance dates, must be cognizant of the delays within the construction industry. For example, he said, it may take up to two and a half years to receive an order of steel.

Paint and Ink

Effluent limitations based on no discharge of waste water pollutants to navigable waters are not appropriate limitations for the paint and coatings industry, according to Larry L. Thomas, speaking for the National Paint and Coatings Association.

The criticism came in reaction to EPA's draft development document for proposed effluent limitations guidelines and new source performance standards for the paint and ink formulation and printing industry. The draft technical report was prepared under an in-house contract by EPA's National Field Investigations Center, in Denver.

The draft document recommended that the BPT effluent limitations for the paint manufacturing industry be no discharge of process waste water pollutants to navigable waters.

Thomas said these limitations would preclude entirely the discharge of any process waste water to streams. He said they are likely to disrupt substantially the discharge of process waste water to publicly owned waste treatment works. He described this potential outcome as counterproductive, since industry should be encouraged, not discouraged from using these treatment facilities.

Thomas recommended that instead of zero discharge of pollutants, a range of concentration levels be established for the industry's pollutants based on workable and cost-efficient treatment technology.

Thomas said reuse of higher volumes of process waste water in paint production is not always feasible. He noted that systems to reuse waste water in large paint factories have not been proven. He added that while some reuse is possible, product mix and production cycles will determine what can be reused.

In any case, more waste water is generated than can be recycled back into products or can be reused for clean up, he said, adding that its eventually must be discharged.

Thomas said that the costs estimates in the draft for achieving no discharge of process waste water for water-base paint production were too low. The amounts estimated in the draft for sludge accumulation were also low, he said.

Thomas said that by eliminating the discharge of any process waste water to navigable waters the draft encouraged the increased use of landfill operations as a method of disposal.

An ES&WQIAC spokesman noted the workshop's concern that the economic impact of meeting the draft guidelines could be destructive for smaller operations.

He noted the consensus that the industry should develop specific technical data to support its position.

An EPA spokesman told the workshop that any data to support special cases of changes in the draft would be considered. He advised that industry comments be technical rather than only philosophical.

Laundries

Industry representatives voiced criticisms concerning the draft development document, dated April 1974, for proposed effluent limitations and new source performance standards for automatic and other laundries prepared under an in-house contract by EPA's National Field Investigations Center, Cincinnati.

John J. Contney, speaking for the Linen Supply Association of America, Miami Beach, requested that EPA review the definition and description of linen laundries. He said most linen suppliers process a mixture of soiled textiles, including dust mops, entrance mats, shop towels, and heavily soiled garments as well as traditional linen supply items He noted that the mixture of these items produces an effluent that may be more difficult to treat than would occur in a plant that processed only light to medium soiled or heavily soiled textiles.

Contney noted that EPA's publication "Modular Waste Water Treatment System Demonstration for the Textile Maintenance Industry," dated January, 1974, never ran tests on a similar mixture.

He recommended that EPA establish a combined category referred to an Industrial/Linen Supply, based on the characteristics and strengths of the waste water produced.

Contney said it was not possible to set guidelines for the waste water effluents of the linen supply industry at this time because EPA had done insufficient research. He said insufficient investigation and sampling had been done on product mix, processing procedures, formulations, and waste water characteristics to categorize properly the linen supply industry.

Demonstrable technology which is capable of reaching the end point effluent limitations proposed in the draft is not available, Contney said.

LSAA suggested that cost estimates related to technology transfer include all costs, such as those for installation, engineering, monitoring equipment, hardware, operation, connection, and contingency costs, he said.

Contney noted that the draft guidelines would fail to solve the over-all problem of environmental pollution since they would transfer the problem to other sources. These included transfers to on-premise laundries, coin-operated laundries, home laundries, or to laundries built in commercial or industrial establishments, not classified as a major contributing industry. They could force a rise in use of substitute products, such as paper or disposables, which would increase the solid waste problem.

He said LSAA requested that EPA guidelines properly describe the application of credits in water purchase and return, and said credits should be given for contaminants in water supplied by municipal systems.

He said LSAA agrees with the EPA's Cincinnati staff that all nondomestic laundries be covered by the guidelines and that EPA should eliminate the 50,000 gallons or more per working day exemption under pretreatment standards (40 CFR 128.124).

Mervyn Sluizer, Jr., of the Institute of Industrial Launderers, said that the BPT guidelines proposed in the draft for the separate industrial laundry subcategory could not be reached by available demonstrated technology.

He noted the potential harmful economic impact associated with developing and establishing a treatment system that could attain the proposed levels for best practicable treatment.

Sluizer recommended that separate effluent guidelines be developed for laundries that discharge into navigable waters and ones that discharge into publicly owned sewage and treatment works.

Fish Hatcheries

Establishment of effluent guidelines limitations for fish hatcheries "is a waste of time," according to J. Timothy Bowen, division of fish hatcheries, Bureau of Sport Fisheries and Wildlife.

Bowen complained that the draft prepared by EPA's National Field Investigations Center in Denver proposes guidelines which are beyond tertiary treatment. A proposal for fish hatcheries is expected in August. The cost for such control is not achieveable, he contended.

The draft report divided the fish culturing industry into three categories – native fish, flow-through culturing systems; native fish, pond-culturing systems; and non-native fish culturing systems.

The report recommended that the native fish flow-through culturing segment of the industry, for best practicable control technology, provide vacuum cleaning of culturing units or sedimentation of cleaning waste flow with sludge removal before discharge into navigable waters.

The BPT recommendation for the native fish pond culturing systems segment of the industry would be settleable solids reduction through controlled discharge of pond draining water. The BPT recommendation for the non-native fish culturing systems segment of the industry is attainment of zero discharge with land disposal.

The recommendation for best available technology for the native fish flow-through culturing systems would involve greater reductions in pollutants discharged by the sedimentation of entire waste flows with sludge removal. The BAT requirements for the native fish pond culturing systems segment and for the non-native fish culturing systems segment of the industry would be the same as the BPT requirements.

The requirements for new source performance standards would be the same as those required for BAT. Parameters considered in the standards are fecal coliform, settleable solids, suspended solids, and ammonium nitrogen.

Bowen said the limitations should not control ammonium nitrogen or suspended solids. Further, the 1983 requirement of treating total flow is economically unreasonable with high flows, he contended. Bowen also criticized the report for failure to categorize the industry according to size for inclusion of non-native species as a category, especially from a disease point of view. He said that while non-native fish can transmit disease to people, risk factors must be considered.

John Riley, head of EPA's working group for the fish hatcheries industry, said the standards for ammonium nitrogen probably will be eliminated because this element is self-controlling and is critical for fish growth.

Riley also said that the working group is investigating the need to control both suspended solids and settleable solids. From a monitoring point of view, settleable solids are much easier to control.

A spokesman for the industry said the treatment processes discussed in the report for the non-native category over-emphasized biological control. The report failed to address ozone treatment, he said. Riley noted that the report does address such other alternatives as chlorination and ultraviolet radiation.

Water Pollution

TIMBER INDUSTRY CRITICIZES STANDARDS AT EPA ADVISORY COMMITTEE WORKSHOPS

Effluent limitations guidelines under consideration for the timber processing industry were severely criticized by member organizations of the National Forest Products Association during workshops sponsored by the Effluent Standards and Water Quality Information Advisory Committee July 8-12 on effluent guidelines under consideration by the Environmental Protection Agency.

A draft contractor's report prepared by Environmental Science and Engineering, Inc. subcategorized the timber industry into 13 areas, but industry spokesmen commented only on the subcategories covering plywood and veneer, log handling, sawmills, insulation board, and particle board. Comments also were directed to hardboard, a subcategory included in effluent guidelines already promulgated for the timber industry.

The treatment schemes proposed by the contractor may result in a net environmental loss, according to a critique prepared by Frank D. Schaumburg, Oregon State University, for the association.

Pollutant Parameters

Schaumburg said the pollutant parameters in the draft do not reflect information necessary to effectively manage environmental quality or to design pollution abatement facilities. The only parameters that should be considered for log handling are biological oxygen demand and suspended solids - settleable, non-settleable, and floatable, he said. The chemical oxygen demand data used by the contractor have little value, he said, because of poor BOD-COD correlation.

The contractor's proposed best available technology for mill ponds, log ponds, and wet decks involves the addition of an oxidation pond to the control technologies specified in BPT. Schaumburg said BAT is "highly questionable" because there are no similar processes currently in use by the industry, transfer technology from the pulp and paper industry is not applicable because of wide variations in water flow, waste composition, and waste strength; collected date did not include any BOD information; collected COD data were highly variable; and negative impacts on land use and aesthetics may offset gains to be achieved in receiving water quality.

Sawmills, Particleboard

A critique of the sawmills and particleboard subcategories prepared by CH2M Hill for the association concluded that both subcategories of the industry could meet the recommended BPT requirement of zero discharge of polluted waste water for those streams identified as process waters. Roof runoff, yard runoff, cooling water, and boiler blow-down were not included.

Insulation

A spokesman for the Acoustical and Insulating Materials Association criticized the definition of the insulating board industry as incorrect in the draft document, and said that the raw data base has not been properly established, and that sub-categorization of the industry has been based upon an arbitrary, low-water consumption factor. Consideration of such other factors as tree species, product mix, plant age, location, and climate was inadequate, he said. The spokesman also complained that the report did not consider low waste water temperature.

Matrix Approach

Don E. Bloodgood, a member of the advisory committee, said the timber processing industry possibly could be used with a matrix system. However, he warned the industry that use of a matrix approach could result in limitations more stringent than a single number inposed by EPA unless state and local governments tempered limitations to protect water quality of an area. The industry supports a matrix system. Under such a system, EPA would provide a single effluent limitation and individual plants would plug in such factors as climate, geography, age of plant, and size of plant.

Nonferrous Metals

Industry representatives were critical of a draft development document recommending effluent limitations guidelines and new source performance standards for the subcategories of the copper, lead, and zinc segment of the nonferrous metals manufacturing point source category. The draft technical report was prepared for EPA by Battelle's Columbus Laboratories.

George McArthur, of Anaconda Company, called the section on primary copper "unreasonable and illogical."

McArthur questioned the feasibility of evaporation ponds as treatment technology. He noted that as the evaporation process proceeds, the level of total dissolved solids rises. Land availability is also a significant factor, he said.

Coal Mining

Geographical location could be an important factor in developing subcategorization for effluent guidelines for coal mining, according to industry spokesman. Deep mining and strip mining are included in this category. A draft contractor's report has not been prepared.

One coal industry spokesman said that for the purpose of subcategorization, geographical location was dependent primarily on water conditions, chiefly precipitation and seepage. The spokesmen agreed that there is no significant difference in the levels of total dissolved solids in deep mining and strip mining.

The possible economic impact associated with the effluent guidelines under development drew concern from industry representatives. It was noted that standards that might be applied realistically to a large coal mining operation could drive a small operation out of business.

Plastics, Synthetics

Subcategorization of the silicone industry segment of the plastics and synthetics industry is not necessary, according to representatives of the silicone industry.

Representatives of the silicone industry did not touch upon any other aspects of the draft report. No other segments of the plastics and synthetics meeting were present.

In the report, best practicable control technology currently available for existing point sources was based on application of end-of-pipe technology at the production site or on utilization of municipal sewage treatment by facilities with appropriate pretreatment methods. The report said end-of-pipe technologies are based on biological treatment systems for biological oxygen demand reductions. These technologies are typified by aerated lagoons, activated sludge process, trickling filters, and aerobic-anaerobic lagoons.

The recommended effluent limitations for best available technology economically available was based on the best in-plant practices of industry which minimize generation of waste water pollutants. These practices are typified by complete segregation of contact process waters from noncontact waste water, maximum recycle and reuse of treated waste water, elimination of all possible contact of water with the processes, preventing leaking materials from getting into waste water streams, and application of such other methods of removing pollutants as reduction of chemical oxygen demand through use of adsorptive flocs, granular media filtration, chemical treatment, or activated carbon.

The contractor's recommended new source performance standards were based on BPT, on maximum possible reduction in process waste generation, and on minimization of waste water flows as described for BAT.

Nonfertilizer Phosphates

The draft contractor's report, prepared by Davy Powergas, Inc., on the nonfertilizer phosphate segment of the phosphate manufacturing industry is adequate with limited exceptions, according to John Reynolds of the Fertilizer Institute.

BPT for the defluorinated phosphate rock and defluorinated phosphoric acid subcategories, as recommended in the report, was zero discharge of waste water pollutants to navigable waters.

However, allowances were made for discharges under certain rainfall conditions.

The recommended limitation for BAT and new source performance standards also was no discharge of pollutants. Allowances were made for certain rainfall conditions.

The contractor recommended that BPT limitations for the sodium phosphate subcategory not exceed .25 kiligrams per metric ton of suspended solids, .40 kg per metric ton of phosphorus, and .15 kg per metric ton of fluoride. The report said pH should be within the range of six to nine.

The recommended limitations for BAT were the same as those for BPT.

Reynolds said there should be consistency between effluent limitations established for fertilizer phosphate and nonfertilizer phosphate plants, especially where both types of facilities are integrated.

Steam Supply

Representatives of the steam supply industry addressed some of the problems that should be considered in developing effluent limitations for the industry. A draft contractor's report has not been prepared, but R. F. Weston has been retained as the contractor.

Representatives suggested that unit process subcategorization should include fuel handling, steam generation, steam trap discharge, boiler make-up water, and noncontact cooling water.

Suggested pollutant parameters which may need control included suspended solids, pH, and metals.

Current Developments July 26, 1974

Water Pollution

PROPOSAL FOR PAPER INDUSTRY CRITICIZED DURING EPA ADVISORY COMMITTEE WORKSHOP

The method of categorization used in the draft development document for effluent guidelines of the converted paper products industry was criticized by industry representatives during July 8-12 workshops held by the Effluent Standards and Water Quality Information Advisory Committee.

Al Herman, of the Fiber Box Association, said a separate subcategory should be created for products that come into contact with food, and a representative of the American Paper Institute said sanitary products should be looked at again, because treated discharge should not be used to manufacture these products.

The document, prepared by the Environmental Protection Agency's National Field Investigation Center, Denver, was criticized for lumping too many articles together in one category.

Glenn Paulson, of ES&WQIAC, said the committee planned to adopt an ongoing data base for two categories – food products and non-food products. Richard Weichman, of API, said it may not be necessary to list products separately as long as they are evaluated separately.

Keith Fry, of International Paper Company, New York, said the converted paper products industry does not discharge in any great volumes, and the draft document doesn't take into account the amount of money, energy, and equipment that would be necessary for it to achieve zero discharge.

Fry also said consideration should be given to plants that print labels, as their discharge problems can be seasonal and regional. The plant that does several small, short orders has a more severe waste problem than one that runs off the same thing all day, he explained.

John Riley, of EPA, said more information is needed from industry on plants that discharge into municipal systems before final guidelines can be promulgated. He added there is some question whether guidelines are needed for the converted paper industry, since the amount of their discharge is minimal.

Weichman told the workshop that by 1977, 5 percent of all converted paper plants would have to close if they are not hooked into municipal treatment systems because EPA has not allowed any flexibility in its definition of "best practicable technology." He explained that some communities may not want plants that are capable of achieving zero discharge if they require extensive construction or expansion.

Pulp and Paper Industry

Craig Vogt, of EPA, reported that a contractor draft report prepared by WAPORA on phase II industries (non-integrated paper mills) is one month away from completion. He said subcategorization of phase II would have to be much greater than phase I, and probably would be done on a mill-to-mill basis.

Pressed and Blown Glass

Industry representatives said that in general the categorization in the contractor's report prepared by Sverdrup and Parcel and Associates, Inc. was adequate except for some factors related to facility age. Age was not correlated with process variables, they said, but rather with such factors as whether process wastes and sanitary wastes could be segregated, whether non-contact cooling water could be segregated from other waste streams, and whether the facility is amenable to improvement in housekeeping.

It was agreed that data on water use and flow were inadequate. As for other parameters, BOD was not considered relevant for process waters, and raw waste loads were adequate.

It was suggested that suspended solids requirements for process wastes composed of silicon dioxide should not be equated with those from biological treatment plants. The oil and grease standard and the COD/no visible sheen standard were considered redundant since the oils used were of animal and vegetable origin, not petroleum based.

Meat Processing

The economic impacts of proposed guidelines included closure of processing plants and unemployment for about 800 persons by 1977. It was estimated that 61 small plant closures would result by 1977 and 29 medium plants by 1983.

The workshop participants concluded that information on meat processing was scarce. The contractor report prepared by North Star Research Institute included one category for small processors, and another for large processors subdivided into meat cutters, canned meat, and processors of sausage and luncheon meat, and ham.

The 1977 discharge limits were based on the characteristics of well operated secondary treatment plants. For small processors, there was no allowable discharge. New source standards were the same as the 1977 limitations.

Off-Site Rendering

Industry participants found no justification for the industry subdivisions in the contractor report by North Star. They said that large renderers would like to see small plants closed, but information is needed on the impacts of plant closings.

Poultry Processing

The participants in this workshop found no major objections to the proposed guidelines for five subcategories in the contractor report prepared by North Star – four based on the type of bird slaughtered and one for plants that further process. New source standards were the same as 1977 limitations for this industry, with the addition of a limitation for ammonia.

The limitations for 1983 were considerably more stringent. The BOD, suspended solids, and grease limitations were based on best performance of treatment systems. Limitations also will be set for Kjeldahl nitrogen, ammonia, phosphorus, nitrates and nitrites.

Fruits and Vegetables

A representative from the National Canners Association said there is no way to assess the canned and preserved fruits and vegetables industry at this time until better categorization is provided.

He said that in the contractor report prepared by Sterns, Conrad and Schmidt, the BOD limitations based on reduction are too stringent, adding that the economics for removal should be based on how much the extra reduction costs amount to when the reduction asked is over 90 percent. .

Water Pollution

AWWA TELLS EPA ADVISORY COMMITTEE SINGLE EFFLUENT GUIDELINE IMPOSSIBLE

A single effluent guideline limitation cannot be established for all public water supplies, Charles A. Buescher, Jr., a spokesman for the American Water Works Association, told a workshop held by the Environmental Protection Agency's Effluent Standards and Water Quality Information Advisory Committee August 12-13.

The workshops were designed to gather information from several industries for development of effluent guidelines limitations.

Buescher said effluent regulations must be appropriate for raw water quality, treatment processes, and produced water. A single standard cannot be established because generated wastes frequently are as dissimilar as wastes from different industrial categories due to varying treatments and raw water quality, he stated.

Several other principles must be followed if meaningful effluent guidelines are to be developed for the public water supply industry, he said. Suspended solids in a raw water supply, when returned to the raw water source, should not be considered water quality pollutants because, since they originally were in the water, they do not change the raw water quality. Furthermore, he said, dissolved solids precipitated from raw water are not water quality pollutants when returned to the raw water source. The raw water quality is not changed because the solids are not discernible after dispersion.

Disposal of wastes cannot be regulated on the basis of quantities produced per million gallons of water processed because quantities of suspended matter and the amounts of dissolved solids vary widely with treatment, he said. Also, it would be unrealistic to define best practicable treatment or best available treatment for the entire industry by describing the operations of a single exemplary waste treatment operation, he said.

Buescher stressed that effluent regulations must consider the impact upon nonwater quality aspects of the environment and upon energy use, must not preclude the discharge of approved drinking water to a waterway, should not require mandatory recycling of wash water and water from basin operations, must not require changes in potable water quality, and should calculate waste characteristics by mass balance methods rather than by "grab" sampling and continuous sampling of filter backwash water and of water containing solids settled in sedimentation basins.

Kenneth E. Shull, vice president of the Philadelphia Suburban Water Company, said effluent guidelines should be flexible enough to meet specific conditions. He suggested that this could be accomplished by providing that specific parameters cannot be increased significantly in the receiving stream by introduction of waste material.

James A. McDermott, director of EPA's water supply division, saw no possibility for recycling waste water for use in water supplies until there is more information on the subject. To do so would be to "use Americans as guinea pigs" because it is unknown what effect recycling would have on public health if operation and maintenance failed, he said.

McDermott said that the possibility of recycling should be researched, but that application at the present time is out of the question because existing standards often are not in effect. Existing drinking water standards are not being honored consistently because of operation and maintenance problems and inadequate sampling and monitoring, he said.

Recommended effluent guidelines for the water supply industry are being developed by Southern Research Institute. Promulgation of the guidelines is expected in May 1975.

Ore Mining, Dressing

The workshop on the metal mining industries was concerned with factors which should be considered in categorization during development of effluent guidelines limitations. The guidelines will cover iron, copper, lead and zinc ores except vanadium, mercury, uranium, radium, vanadium, and metal ores not classified elsewhere.

Industry representatives attending the workshop said that factors which should be considered for categorization include availability of water resulting from precipitation and evaporation, type of process, location of operations within a unit, water balance, availability of land, age of mines, ore body duration of mines, differences in mineralogical constituents, and exploration of drill sites. All industry representatives attending the meeting agreed that drilling of a new site should be a separate category because a deposit is not considered an ore until it is determined to be profitable. Exploration should not be subject to new source performance standards until development and mining occur, the representatives said.

A contract to develop recommended guidelines was let by EPA to Calspan Corporation in July. An EPA spokesman said the contractor will not address the problem of exploration but added that this is an area which may be examined in the next couple of years.

Miscellaneous Foods, Beverages

A series of workshops were held on the miscellaneous foods and beverages industry, but many specifics were not discussed because the contract for development of recommended guidelines had been let only in July to Environmental Science and Engineering, Inc., the prime contractor; Environmental Associates, Inc.; and SCS Engineers.

Dick Watkins, EPA's project officer for development of the guidelines, told Environment Reporter that the guidelines are important because the miscellaneous food and beverages industry represents 60 percent of the total food industry and 10 percent of U.S. manufacturing establishments. The miscellaneous foods and beverages industry is broken down into the segments of beverages, fats and oils, specialty products, and confectionary products.

Watkins said there probably will be several variances in the standards because of such factors as difference in products, plant age, plant size, process, waste load characteristics, and economic impact. He said the guidelines probably will be proposed in February 1975 and promulgated in May 1975.

John Crane of Environmental Science and Engineering, said the company plans to conduct a telephone survey, make plant visitations, and take samples of selected plants to obtain the data base needed to establish the recommended guidelines.

The company will place telephone calls to all major corporations and to many individual plants, he said. The information requested will include principal products manufactured, quantity of waste effluent in gallons per day, method of waste effluent disposal, and historical data base information.

Following the survey, plant visits will be made, starting in late August. Information will be sought on waste water handling and treatment in order to obtain detailed information on waste water unit flows and characteristics, products produced, normal production rate, estimation of waste effluent quantity, the surcharge rate if disposal is to municipal sewers, detailed description of treatment if disposal is to navigable waters, description of system used if disposal is to land, copies of plant records of waste water flows and analyses, treatment plant efficiencies correlated to production, history of money spent on waste water control and treatment, any cost savings resulting from in-plant modifications or procedures, operating costs of treatment or disposal facilities, types of raw materials used and amounts used per hour or day, and detailed process flow and waste treatment diagrams. The firm also will ask for a description of all points of water use, reuse, or recycle; sources of waste effluent and waste solids; origin, quantity, and quality of incoming water; an indication of any effects on waste effluent; a description of cooling water used, the percentage recycled; and the quantity of water used for cleanup.

Based on the visits, certain plants will be selected for verification sampling, he said. Results of the analyses will be sent back to the plants. He added that the splitting of samples will be encouraged.

Each subcategory in the miscellaneous foods and beverage industry will be the subject of at least one hypothetical model plant, he said. Alternatives for control and treatment will be developed for each model plant and in-depth cost analyses will be conducted for all alternatives.

Crane said the final recommended guidelines will be the result of cost effectiveness of treatment alternatives with related energy requirements and nonwater quality impacts.

Machinery, Mechanical Products

The workshop on industries involved in machinery and mechanical products manufacturing was confused.

Industry representatives attending the meeting said it would be almost impossible to categorize the industry because its scope was so broad. The effluent guidelines will cover 175 industries with products ranging from burial caskets to aircraft.

The representatives agreed that raw waste loads and units of production are not important factors when establishing effluent limitations. What is important, they said, is waste type. Chemical treatment of specific parameters was not discussed in detail.

The representatives requested that another workshop be held after the contractor, Hamilton Standard, has prepared a draft report. The contract was let by EPA in July, and a draft report should be available next April.

COMMITTEE MEETINGS

During ES&WQIAC's second year of operation, five public meetings were held centered on technical discussions, document and proposal critique and formal presentations by industry and government representatives on technological subjects pertinent to the Committee's mandate. Three of these meetings took place at ES&WQIAC's Arlington, Virginia, headquarters, one was held in Nashville, Tennessee and the other, in Denver, Colorado in conjunction with the national conference of the Water Pollution Control Federation.

A summary of the topics discussed follow:

March 26, 1974
Crystal Mall, Arlington, Va.

The Committee's first meeting of its second year included presentations from industry and EPA in relation to the preparation of the Phase II industrial limitations.

In particular, effluent guidelines for petroleum refineries were discussed by Mr. R. C. Mallet, of the American Petroleum Institute, who presented an application of refinery complexity, based on relative sizes of process units, to raw waste load and water use.

Representatives of EPA's National Field Investigation Center in Cincinnati, Ohio, made presentations on EPA's in-house studies on transportation, paving and roofing materials, and auto and other laundries, as they relate to effluent guideline development.

Preceding page blank

Committee members discussed ways in which the Committee should interact with the basic effluent guidelines development process, and agreed that ES&WQIAC should be involved at the earliest possible time in the basic conceptual development of the process leading to a specific effluent guideline. This suggestion and the early input chart on the last page of this section were forwarded to the EPA Administrator. The Committee also proposed that EPA contractors be requested to group data into uniform and comprehensive formats so that the data base available for a given industry could be more readily determined.

Attendees at the meeting included ES&WQIAC members and staff, 13 EPA representatives, two representatives from the National Commission on Water Quality, and approximately 30 representatives from industry and other Federal agencies.

April 23-24, 1975
Vanderbilt University, Nashville, Tenn.

The purpose of this meeting in Nashville was to learn from staff of Vanderbilt University the results of analyses which utilized the matrix approach proposed by ES&WQIAC for establishing effluent limitation guidelines.

Topics discussed by members of the Vanderbilt staff included data on variability in raw waste loads of the industries analyzed; end-of-pipe biological treatment process models used in the analyses; detailed cost models used for estimating the capital and operating costs for activated sludge systems, aerated lagoons, and spray irrigation; and variability in final effluent quality as opposed to variation in raw waste loads. Specific presentations were made on three industrial categories: organic chemicals (including plastics and synthetics industry), the hardboard industry, and the potato industry.

October 8, 1974
Denver, Colorado

This ES&WQIAC meeting was held in conjunction with the 4th Annual Conference of the Water Pollution Control Federation at the Convention Center in Denver. The agenda for the Denver meeting included a broad discussion by Dr. Martha Sager, ES&WQIAC chairman, on effluent limitations problems and the need for improved data for both development of new effluent limitations and the revision of past effluent limitations. The Committee members discussed development of public hearings on interpretations or possible amendments to PL 92-500.

Methods for achieving Best Available Control Technology for 1983 also were discussed by Dr. Sager who outlined some research and development tasks being undertaken by EPA, and gave examples of synergistic operations in which waste products of one industry become the raw products of another industry.

A discussion of the matrix approach to industrial subcategorization was led by Mr. Andrew Edwards, of Vanderbilt University. Mr. Edwards illustrated a variety of applications to industries, including the pulp and paper industry and potato processing, and described how such analysis of industry parameters might help produce more effective subcategorization.

Dr. Sager then discussed the ES&WQIAC report to the House Public Works Committee on Investigations and Review, Mrs. Mattingley, ES&WQIAC Legal Counsel, discussed the present state of litigation on effluent limitations and Mr. Brossman, ES&WQIAC Executive Director, presented a Quarterly Progress Report.

Attendees at the meeting included ES&WQIAC members and staff and 30 people from industry, EPA, and other government agencies.

October 31, 1974
Crystal Mall, Arlington, Va.

This meeting was devoted to Section 307 of PL 92-500 which deals with toxic substances. Dr. Lloyd Smith, Jr., ES&WQIAC member, noted that the Committee was interested in studies and new work by EPA directed to promulgation of toxic substance regulations and in the technical and legal status of Section 307 as compared to other sections of PL 92-500.

Mr. Kenneth Mackenthun, Acting Director of the Technical Standards Division, EPA, discussed the present status on the toxics issue. He acknowledged an insufficiency of knowledge regarding the economic impact of standards, proposed or to be proposed - regarding treatment technology as it relates to any national standards that might be developed under Section 307; and regarding the analytical capability of detecting the low limits that are believed necessary to protect aquatic life and the uses and consumers of aquatic life.

Mr. Allen Eckert, of EPA's Office of the General Counsel, outlined some of the legal problems associated with the implementation of Section 307(a), particularly as it compares with Section 112 of the Clean Air Act.

Mr. Carlos Fetterolf, of the Michigan Department of Natural Resources, reviewed the rationale employed by the National Academy of Sciences' Committee on Water Quality Criteria in developing "Water Quality Criteria, 1972", better known as "The Blue Book".

Allan Cywin, Director of EPA's Effluent Guidelines Division outlined the Agency's effluent limitation plans and schedules. He discussed the breakdown of the industries listed in Section 306 and some of their categorizations.

ES&WQIAC Member Don Bloodgood reported on the Committee's review of EPA documents and rule-making packages. This undertaking is discussed in detail elsewhere in this report.

More than 60 representatives including ES&WQIAC, EPA, industry, and other government agencies, attended the meeting.

February 26, 1975
Crystal Mall, Arlington, Va.

This meeting was the first in a planned series of meetings on Best Available Technology (BAT) to be continued during the third year of operation. The key presentations were made by representatives of the Aluminum Company of America (ALCOA), Calgon corporation, and E.I. du Pont de Nemours and Company, who discussed the Thermopure-Process, carbon absorption, and reverse osmosis, respectively.

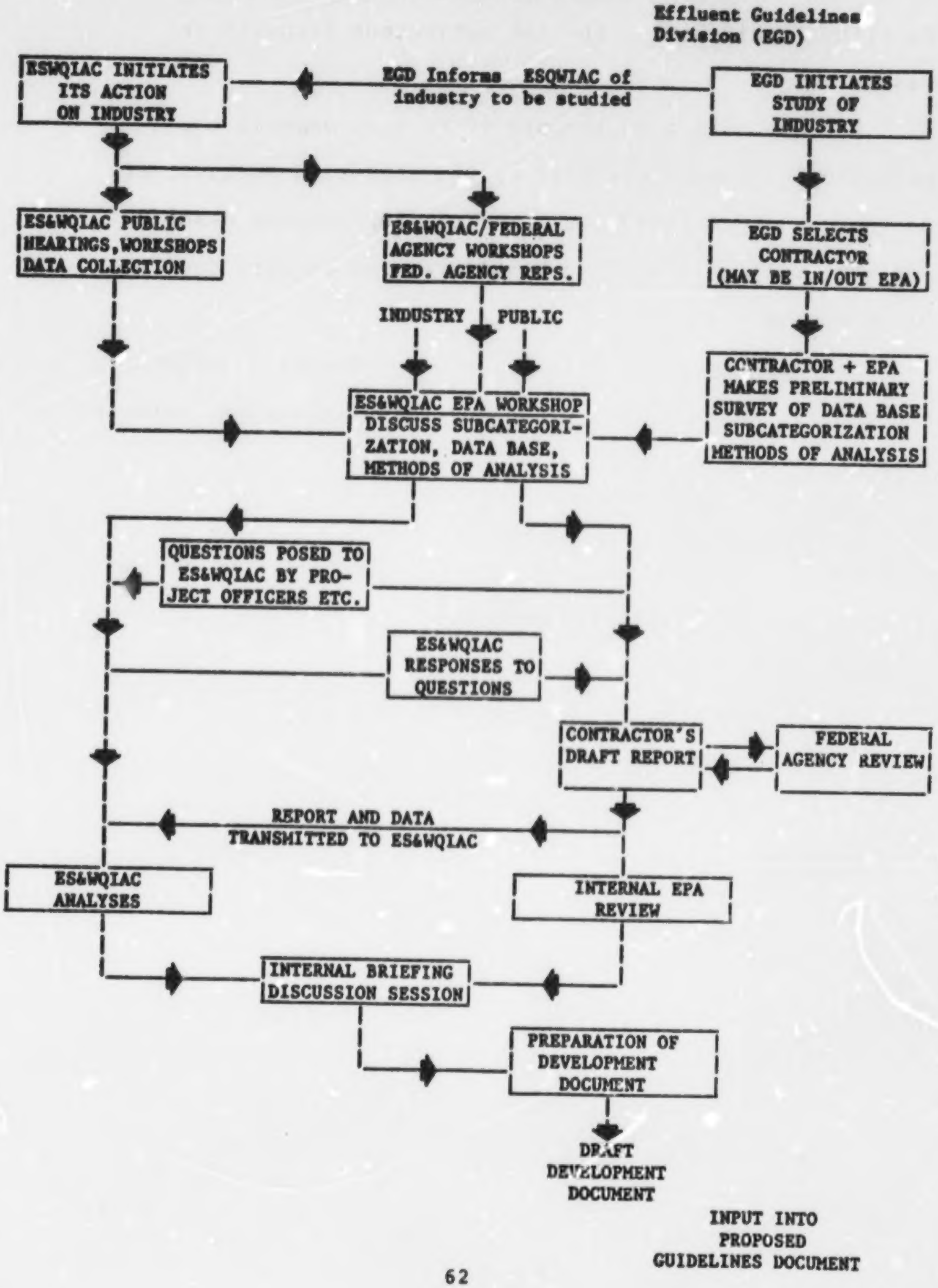
The ALCOA representatives, Dr. M. H. Brown, Dr. James L. Brandt, Mr. O. M. Mader, and Mr. R. G. Hampel, described the "Thermopure" water treatment process which the company has been developing for about four years. Accordingly to ALCOA, the process operates either on low-pressure steam generated from waste steam and stack gas, or from other available low-pressure steam. Initially investigated for desalination, the process is applicable in concentrating many types of effluents to produce high quality water and to reduce the volume of waste disposal.

Mr. Joseph Rizzo, of Calgon, described carbon absorption and the use of this process at individual plants throughout the U.S. The discussion which followed the presentation centered around the problem of carbon reactivation, facility requirements, and the subsequent disposal of wastes.

A presentation on the use of reverse osmosis for pollution abatement was made by Dr. Frederick Merliss, of du Pont. He described the principles of reverse osmosis and the applications of du Pont's reverse osmosis device - "Permasep permeators".

Over 50 representatives, including ES&WQIAC members and staff, industry, and other government agencies, attended this meeting.

ES&WQIAC PROPOSED
EARLY INPUT STAGES FOR DEVELOPING EFFLUENT GUIDELINES


Effluent Guidelines Division (EGD)
ESWQIAC INITIATES ITS ACTION ON INDUSTRY
EGD Informs ESQWIAC of industry to be studied
EGD INITIATES STUDY OF INDUSTRY
ES&WQIAC PUBLIC HEARINGS, WORKSHOPS DATA COLLECTION
ES&WQIAC/FEDERAL AGENCY WORKSHOPS FED. AGENCY REPS.
EGD SELECTS CONTRACTOR (MAY BE IN/OUT EPA)
INDUSTRY
PUBLIC
CONTRACTOR + EPA MAKES PRELIMINARY SURVEY OF DATA BASE SUBCATEGORIZATION METHODS OF ANALYSIS
ES&WQIAC EPA WORKSHOP DISCUSS SUBCATEGORIZATION, DATA BASE, METHODS OF ANALYSIS
QUESTIONS POSED TO ES&WQIAC BY PROJECT OFFICERS ETC.
ES&WQIAC RESPONSES TO QUESTIONS
CONTRACTOR'S DRAFT REPORT
FEDERAL AGENCY REVIEW
REPORT AND DATA TRANSMITTED TO ES&WQIAC
ES&WQIAC ANALYSES
INTERNAL EPA REVIEW
INTERNAL BRIEFING DISCUSSION SESSION
PREPARATION OF DEVELOPMENT DOCUMENT
DRAFT DEVELOPMENT DOCUMENT
INPUT INTO PROPOSED GUIDELINES DOCUMENT

CONGRESSIONAL LIAISON

The ES&WQIAC Committee and its staff have maintained on-going liaison with Congress. The major part of this liaison has been with the Senate Public Works Committee and the House Public Works Committee, particularly its Subcommittee on Investigations and Review.

One of the Committee's tasks during this second year was its participation in oversight hearings on PL 92-500 which were held by the House Public Works Subcommittee on Investigations and Review, chaired by Congressman James C. Wright, Jr., of Texas.

In response to a request from Congressman Wright, ES&WQIAC prepared a report which discussed the critical issues and major concerns of ES&WQIAC with respect to implementation of Sections 304(b), 306 and 307 of PL 92-500. The report and statements prepared by ES&WQIAC Chairman Dr. Sager and Committee members Don Bloodgood and Ramon Guzman follow:

REPORT OF EFFLUENT STANDARDS AND WATER QUALITY INFORMATION ADVISORY COMMITTEE

SUMMARY

The E.S. & W.Q.I.A.C. members have been concerned with the following critical issues with regard to the effluent limitations for industrial point source discharges being developed by EPA under sections 304(b). 306, and 307 of Public Law 92-500; specifically:

(1) EPA's interpretations of definitive terminology and the effects of these interpretations on the promulgated limitations. i.e. Exemplary Plants; National Standard; Guideline; Effluent Limitation; BPT; and, Zero Pollutant Discharge.

(2) The effectiveness of the methodology selected by the agency to develop industrial point source effluent limitations; i.e., selection of a descriptive and

Proceding page blank

qualitative contractor's approach rather than a quantitative mathematical methodology.

(3) Specific items which resulted because of the definitions adopted by the agency and the applications of the methodology selected:

(a) Percent BOD reduction required of BPT by 1977;

(b) Factors excluded generally in establishing subcategories in many of the promulgated regulations;

(c) Economic equities largely imbalanced in favor of large "most exemplary plants";

(d) Lack of quantitative economic analysis of nonwater impacts and energy requirements in the promulgated documents to date;

(e) Lack of economic and scientific substantiation with regard for section 307 and toxic materials effluent discharges; and

(f) Lack of cooperation by the Effluent Guidelines Division with the Committee efforts to provide, assess and evaluate scientific and technical information for the Administrator of EPA according to the mandate for the E.S. & W.Q.I.A.C. in section 515 of Public Law 92-500.

Submitted by,

MARTHA SAGER, *Chairman.*

The Effluent Standards and Water Quality Information Advisory Committee was established under section 515(a)(1) of the act. Specifically the members of the Committee were selected "from the scientific community, qualified by education, training, and experience to provide, assess, and evaluate scientific and technical information on effluent standards and limitations," and to transmit this information and advice to the Agency.

"EFFLUENT STANDARDS AND WATER QUALITY INFORMATION ADVISORY COMMITTEE

Establishment

"SEC. 515. (a)(1) There is established an Effluent Standards and Water Quality Information Advisory Committee, which shall be composed of a Chairman and eight members who shall be appointed by the Administrator within sixty days after the date of enactment of this Act.

Membership

"(2) All members of the Committee shall be selected from the scientific community, qualified by education, training, and experience to provide, assess, and evaluate scientific and technical information on effluent standards and limitations.

Term

"(3) Members of the Committee shall serve for a term of four years, and may be reappointed.

Proposed regulations, public hearing

"(b)(1) No later than one hundred and eighty days prior to the date on which the Administrator is required to publish any proposed regulations required by section 304(b) of this Act, any proposed standard of performance for new sources required by section 306 of this Act, or any proposed toxic effluent standard required by section 307 of this Act, he shall transmit to the Committee a notice of intent to propose such regulations. The Chairman of the Committee within ten days after receipt of such notice may publish a notice of a public hearing by the Committee, to be held within thirty days.

"(2) No later than one hundred and twenty days after receipt of such notice, the Committee shall transmit to the Administrator such scientific and technical information as is in its possession, including that presented at any public hearing, related to the subject matter contained in such notice.

"(3) Information so transmitted to the Administrator shall constitute a part of the administrative record and comments on any proposed regulations or standards as information to be considered with other comments and information in making any final determinations.

"(4) In preparing information for transmittal, the Committee shall avail itself of the technical and scientific services of any Federal agency, including the United States Geological Survey and any national environmental laboratories which may be established.

Secretary; legal counsel

"(c)(1) The Committee shall appoint and prescribe the duties of a Secretary, and such legal counsel as it deems necessary. The Committee shall appoint such other employees as it deems necessary to exercise and fulfill its powers and responsibilities. The compensation of all employees appointed by the Committee shall be fixed in accordance with chapter 51 and subchapter III of chapter 53 of title V of the United States Code.

5 USC 5101, 5331

"(2) Members of the Committee shall be entitled to receive compensation at a rate to be fixed by the President but not in excess of the maximum rate of pay for grade GS-18, as provided in the General Schedule under section 5332 of title V of the United States Code.

Quorum

"(d) Five members of the Committee shall constitute a quorum, and official actions of the Committee shall be taken only on the affirmative vote of at least five members. A special panel composed of one or more members upon order of the Committee shall conduct any hearing authorized by this section and submit the transcript of such hearing to the entire Committee for its action thereon.

Rules

"(e) The Committee is authorized to make such rules as are necessary for the orderly transaction of its business.

MEMBERS OF THE COMMITTEE

Chairman

Dr. Martha Sager: Professor and Director of Environmental Systems Management Program within the Center for Technology and Administration, College of Public Affairs, American University, Washington, D.C.; Consultant, Environmental Management; Member, Air Quality Evaluation Panel; Specialist in Environmental Engineering and Industrial Microbiology.

Vice Chairman

Mr. Blair T. Bower: Private Consultant; Lecturer in Environmental Planning and Management, University of North Carolina; Consultant to State and International Government Agencies; Formerly: Associate Director of the Quality of Environmental Program, Resources for the Future, Washington, D.C.

Members

Mr. Don E. Bloodgood: Professor Emeritus of Sanitary Engineering at Purdue University, West Lafayette, Indiana: Consultant to government and industry on problems of industrial and municipal wastes and waste treatment; Author of more than 130 articles on wastes and waste treatment.

Mr. William W. Eckenfelder, Jr.: Distinguished Professor of Environmental and Water Resources at Vanderbilt University, Nashville, Tennessee; Expert on biological treatment of sewage and industrial wastes; Consultant to government and industry.

Dr. Robert B. Grieves: Professor and Chairman of the Department of Chemical Engineering, University of Kentucky, Lexington, Ky.; Director of the Kentucky Water Resources Research Institute (Public Law 88–379), University of Kentucky; Specialist in industrial water and waste treatment.

Mr. Ramon Guzman: Private Consultant; Ad Honorem Professor, School of Medical Sciences, University of Puerto Rico, San Juan, P.R.; Consultant to World Health Organization; formerly Executive Secretary, Water Pollution Control Advisory Board, P.R.; Specialist in industrial waste problems.

Mr. Robert McCall: Director, Environmental Health Services of the State Department of Health, West Virginia: Registered Professional Engineer: Diplomate in the American Academy of Environmental Engineers; Chairman-Elect, Conference of State Sanitary Engineers.

Dr. Glenn Paulson: Staff Scientist with the Natural Resources Defense Council in New York City; Member, Committee on Occupational Health and Safety, American Public Health Association: Consultant to Special Committee and the Environment, New York Chamber of Commerce and Industry.

Dr. Lloyd Smith, Jr.: Professor in the Department of Entomology, Fisheries, and Wildlife at the University of Minnesota, St. Paul; Expert in the effect of water quality on fisheries and other aquatic life.

Executive secretary

Mr. Martin W. Brossman: Full time Executive Secretary of E.S. & W.Q.I.A.C. Formerly: Consultant to EPA on multi-media environmental problems: Principal of Planning Research Corporation (PRC); and, a Vice President of PRC's management consulting subsidiary, H. B. Maynard and Company.

E.S. & W.Q.I.A.C. APPOINTMENT DELAY

Although the Committee was an integral part of Public Law 92–500 when it was passed in October 1972 and was scheduled for appointment within 60 days of enactment, members were not sworn in until February 1973, and the first meeting of the Committee was March 2, 1973. This time lapse in the appointment of the Committee obviated any input by these persons to the Agency with regard to either the methodology prescribed or the contractors selected, or the total procedures adopted by the Agency for meeting the requirements under Sections 304(b), 306, and 307 of the act.

FIRST YEAR'S ACCOMPLISHMENTS

However, the E.S. & W.Q.I.A.C. planned the first year of activities to include public hearings, Committee meetings and workshop seminars, each of which was directed towards supplementing the scientific and technological data bases being gathered by the Agency for inclusion in the development of industrial effluent limitations. In these efforts the Committee held 58 workshops, 12 public hearings and 16 Committee meetings, all of which were open to the public. Members also critiqued draft and final documents for the 27 initial industries and provided these documents with their technical comments to the Agency (appendix).

E.S. & W.Q.I.A.C.'S COMMENTS ON METHODOLOGY

As a result of these activities E.S. & W.Q.I.A.C. found the following items and issues of critical concern in the devolpment of the first 27 documents:

(1) The method selected by the agency in the development of industrial point source effluent limitations for the first group was the conventional "contractor-tor's approach" historically employed for extensive descriptive analyses by federal agencies.

This method demands external evaluation of internally generated data. The success of this method is dependent upon the expertise of the contractor and the adequacy of the data made available to the contractor.

The time constraints inherent in the Public Law 92-500 precluded the generation of additional data by industry or the contractors or the agency, therefore, the paucity of adequate data in relation to the time frame influenced the effluent limitations established during this initial period.

SUBCATEGORIZATION

(2) The subcategorization methodology was based primarily on the building block approach which described and detailed the various operating procedures and the particular production process employed. Although the Request for Proposal (RFP) required consideration of such economic factors as age and size of a plant, the basic consideration for subcategorization was centered on the production process in the majority of cases.

Waste treatment types were generally based on best practical technology (BPT) as described in the exemplary plants selected by the agency while, other kinds of waste treatment practices within an industry were largely ignored.

This practice favored or weighted the subcategorization in favor of the larger, more modern, more exemplary plants, and has placed or will place a severe economic burden on the smaller, least financially endowed facilities within generic industries.

BPT

(3) The concept of Best Practical Technology (BPT) for 1977 has been interpreted as the best waste treatment process currently available; but, does not exclude the possibility of in-plant production process alterations for achieving the effluent limitation. The concern of E.S. & W.Q.I.A.C., however, is that BPT excludes those lesser waste treatment types which may be prevalent in an industry and which are not designed to get the reduction required through the BPT limitation.

This inequity from the lack of consideration of a variety of waste treatment processes in determining the BPT resulted in the Waste Treatment Type factor included and described in the Matrix Method.

PILOT PLANT DATA

(4) Some of the limitations for Phase I were based on results of laboratory or pilot plant studies for BPT in which the variables were strictly controlled in ways which might be impractical under actual plant conditions. Such results should not be applied in the definition of effluent guidelines and reflected in the limitations.

PILOT PLANT EXAMPLES

Examples of pilot plant studies are:

Page 52 of the Development Document on Leather Tanning and Finishing, "Advanced treatment facilities ar nonexistent. Some pilot studies of reverse osmosis and activated carbon have been made, but without well defined results. Filtration and ion exchange have not been tested on tannery effluents."

Also, see pages 89 and 90 of the same Development Document.

Page 70, of the Development Document for Cane Sugar Refineries says, "Biological treatment of sugar wastes has been demonstrated to a limited extent in the raw cane sugar industry and more extensively outside the industry * * *".

Technical transfer when not validated by in-plant operations should also not be included as BPT. Yet, this concept has been included in a number of industries.

For example, in a March 28, 1974 letter to Russell Train on Seafood Processing, the Department of Commerce, page 6, stated, "We do not believe that the data from limited laboratory and pilot tests by EPA and other (including NMFS Studies) are sufficient to project consistent effluent reduction levels as targeted in the effluent guidelines, nor has the total cost of such treatments been demonstrated on a real basis. Further, we cannot accept in the absence of any supporting data that EPA can contend that operating factors and costs from effluent reduction technology in other industries, such as Meat Processing, can be transferred to Seafood Processing."

(5) Industrial effluent limitations, specifically those related to the parameter of BOD, have been established in terms of pounds of BOD discharged per unit of product produced. When these numbers are translated into percent removal required, it is the concern of the members of E.S. & W.Q.I.A.C. that many in industrial facilities will not be able to reach the 95% plus discharges which are required because of the nature and design of their various treatment processes.

Again these high percent removals are related to the BPT concept of the exemplary plant, which does not include variations for individual facilities based on factors of economic equity, climatic and geographical location, waste treatment type, etc. The percent removals required for some of the first 27 industries are indicated on the following chart:

SUMMARY—RAW WASTE-FLOW-BPT-BAT AND PERCENT REMOVALS

Category	Gal. 1,000 Kg	Mg/l Raw BOD	Mg/l BPT BOD	Mg/l BAT BOD	#s BOD/1,000 Kg RAW	#s BOD/1,000 Kg BPT	#s BOD/1,000 Kg BAT	Percent removal BPT	Percent removal BAT
Simple slaughterhouses	1,407	512	6.8	2.6	6.00	0.08	0.03	98.7	99.5
Complex slaughterhouses	1,949	671	10.5	2.5	10.90	.17	.04	98.4	99.6
Low processing P.H	2,071	468	6.9	2.3	8.1	.12	.04	98.5	99.5
High processing P.H	3,305	583	8.7	4.7	16.1	.24	.13	98.5	99.2
	Gal/ton					#s BOD/TON			
Apple juice	680	712	69.5	24.3	4.1	0.40	0.14	90.2	96.6
Apple products	1,290	1,190	65.1	13.0	12.8	.70	.14	94.5	98.9
Citrus	2,425	316	24.7	4.9	6.4	.50	.10	92.2	98.4
Frozen potatoes	2,710	2,026	84.1	14.2	45.8	1.90	.32	95.9	99.3
Dehydrated potatoes	2,100	1,262	105.7	18.3	22.1	1.60	.32	92.8	98.6
Crystalline cane sugar	9,200	40	9.9	1.0	3.080	.76	.08	75.3	97.4
Liquid cane sugar	4,500	196	12.8	3.2	7.34	.48	.12	93.5	98.4
	Gal/1,000 #s								
1. Leather	6,400	1,780	51	25					
	[1] 4,000	2,827	80	40	95	2.7	1.35	97.1	98.6
2.	7,600	1,088	50	25					
	[1] 6,000	1,379	64	32	60	3.2	1.60	95.4	97.2

SUMMARY—RAW WASTE-FLOW-BPT-BAT AND PERCENT REMOVALS—Continued

Category	Gal 1,000 Kg	RAW BOD	Mg/l BPT BOD	Mg/l BAT BOD	#s BOD 1,000 Kg RAW	#s BOD 1,000 Kg BPT	#s BOD 1,000 Kg BAT	Percent removal PBT	Percent removal BAT
3. Leather	6,000	1,333	50	25					
	¹5,000	1,607	60	30	67	2.5	1.25	96.3	98.1
4.	2,400	1,849	50	25					
	¹2,600	2,218	60	30	37	1.0	.50	97.3	98.6
5.	7,600	1,057	50	25					
	¹7,500	1,071	51	26	67	3.2	1.60	95.2	97.6
6.	3,400	3,879	49	25					
	¹2,000	6,504	81	42	110	1.4	.70	98.7	99.4
A. Soap and detergent	75	2,338	640	426	2.25			73.3	82.2
		3,600	953	633	2.25	.60	.40	60.0	73.0
C.	31		33	33	3.0	.01	.01	99.6	99.6
D.	1,200	1,430	150	40	15.0	1.50	.40	90.0	97.3
G.	750	320	54	32	2.0	.34	.20	83.0	90.0
H.	2	6,024	602	602	.10	.01	.01	90.0	90.0
I.	330		7.2	7.2	.02	.02	.02	90.0	90.0
	12	2,030	200	200					
L. No water					30.0	.30	.10	99.0	99.7
M.					3.0	.30	.15	90.0	95.0
N.	1,100	85			.81			98.8	98.8
	1.25	6,000			.07	.01	.01	85.7	85.7
P.	75	3,400			2.13			90.6	97.7
	750	65			.41	.20	.05	51.2	87.8
Timber products:									
Ab—Hydraulic bark	(²)	56				#s cubic ft			
		250				.03	N.D.		
Bb.	(²)					.15	N.D.		
Bc.	(²)					0.034	N.D.		
	Gal ton					#/s ton			
E.	10,965	720			65.8			92.1	97.3
	1,760	3,900			57.2	5.2	1.0	90.1	96.9
Dairy products:									
A. Receiving stat. bulk	99	557	14.5	3.6	.46	.012	.003	97.4	99.3
A. Receiving stat. cans	65	314	36.9	11.1	.17	.020	.006	88.2	96.5
B. Fluid products	466	826	15.4	2.1	3.21	.060	.008	98.1	99.7
C. Cultured products						.080	.033		
D. Butter	251	382	38.7	6.2	.80	.081	.013	89.9	98.4
E. Cottage cheese						.456	.107		
F. Natural cheese	8.1	800	124.3	17.8	.60	.084	.012	86.0	98.0
			41.4	8.8		.028	.006	95.3	99.0
G. Ice cream mix	890	1,812	8.0	1.1	13.45	.060	.008	99.6	99.9
H. Ice cream	236	503	121.9	17.8	.99	.240	.025	75.8	96.5
I. Condensed milk	485	544	9.9	2.0	2.20	.040	.008	98.2	99.6
J. Dry milk	300	647	24.0	4.4	1.62	.060	.011	96.3	99.1
K. Condensed whey	293	430	16.4	3.3	1.05	.040	.008	96.2	99.2
L. Dry whey	320	540	22.5	4.1	1.44	.060	.011	95.8	99.2
						#s/1,000 ducks			
Ducks, wet lot min	23,058	26	10.4	N.D.	5.0	2.0	N.D.	60.0	100.0
Ducks, wet lot max	7,341	490	32.6	N.D.	30.0	2.0	N.D.	93.3	100.0
						#s/1000#s			
Beet sugar (See notes)						2.2	N.D.		

---

[1] Flow used in economic analysis.

[2] No data.

BAT

(6) Best available technology for 1983 has been interpreted by E.S. & W.Q.I.A.C. to mean all technology changes and/or procedural alterations which will become available ten years hence for use by industrial dischargers in reaching the effluent limitations required under the BAT limitation. Because this refers to a future time it is questionable whether or not exact numbers in terms of pounds per ton or pounds per unit of product produced for certain parameters to be promulgated anticipatory to new and innovative devices which might be utilized nine years hence.

ECONOMIC ANALYSIS OF FIRST 27 INDUSTRIES

Economic equities have been a concern to E.S. & W.Q.I.A.C. members for numerous reasons, including the practice of excluding variations in production processes, variations in raw waste loadings, land availability and costs, waste treatment process and age and size of a plant. As was indicated previously, these factors are basic to the Matrix Method for establishing effluent limitation.

Additionally, the economic costs of controlling toxic pollutants under section 307 of the act have yet to be calculated in final form, and, therefore, adequate economic projections have not yet been ascertained for section 307. However, E.S. & W.Q.I.A.C. provided the following position paper to the Effluent Guidelines Division regarding section 307. (See addendum, April 9 Position Paper.)

Economic reports on the first 27 industries have been categorized and described by some Committee members as follows:

1. Economics and the Exemplary Plant Concept.
2. Economics and Data Base Availability.
3. Economics and Energy Requirements.
4. Economics and Non-Water Impacts.
5. Economics and Foreign Trade Markets.

EXEMPLARY PLANT CONCEPT

The concept of regulation of generic industries through the selection of exemplary plants around which effluent limitations were developed provides an erroneous model because it excludes all other operation facilities within a specific industry from consideration in relation to Best Controlled Technology Currently Available.

Exemplary plants have been defined by the Agency as large plants which were able to meet the proposed levels of technology. Obviously, the small and medium sized facilities were excluded from this definition and were therefore, excluded from the data base on which economic considerations were developed.

METHODOLOGY/ECONOMIC STUDIES

The method for handling economic analysis in order to give some consideration to the smaller facilities was to scale down the statistics generated for the larger plants without a specifically designated methodology specified in the RFP for that reduction process period. Therefore, much of the individualization which could have been used in the subcategorization was covered by the blanket of arithmetic reduction; those smaller industrial facilities excluded from adequate consideration in the initial development of effluent limitations because of the exemplary plant concept were excluded a second time from the economic investigations because the data base was the same for both analyses and were further excluded by the nature of the methodology used to statistically reduce the numbers from the larger to the smaller industries.

DATA BASES/ECONOMIC STUDIES

The kinds of data bases necessary for the development of industrial discharges to adequately described the raw waste load in a given industry were generally not available in 1972 and, because of the time constraints written into the act could not be made available in time to meet the deadline set up in the statute. To off set the lack of analyses over representative time periods either grab or composite sample were substituted by the contractor in many instances. Examples may be noted in the Soaps and Detergents Industry, as well as the Leather Tanning industry, and many others.

Obviously, if the data base is faulty, inadequate or non-existent the resulting analysis cannot be correct. Many of the economic analyses of the first 27 industries reflect the inadequacies of the data bases.

ENERGY/ECONOMIC STUDIES

There is a paucity of information throughout the economic analyses with regard to any of the relationships cost-wise between energy sources, consumption, and the market place, either domestic or foreign, which could accurately be said to adequately present the economic picture of an industry with respect to its energy use. For example, on page 148 of the Feedlot Development Document, the statement about energy reads, "the system however, is a relatively high consumer of electrical power and water." Again in that same report on page 230 both energy requirements and non-water aspects of the effluent limitation are addressed in a table where energy requirements are listed as "high" or "low".

It seems doubtful that such descriptive terminology can be said to provide adequate bases on any kind of quantitative scale. Further, in this particular document of the Feedlots industry (cited here only as an example) the non-water quality aspects are addressed by simply naming the waste product on the same table which follows here :

Table 41, Page 230 of Draft Development Document on Feedlot Industry, Contract #68-01-0595, June 1973.

DESCRIPTIVE TERMINOLOGY AND NONWATER IMPACTS IN ECONOMIC STUDIES

Technology	Net energy usage	Byproduct
Land utilization	Low	None.
Composting	Low	None.
Dehydration	High	None.
Conversion to industrial production	Low	None.
Aerobic SCP production	High	None.
Aerobic yeast production	High	None.
Anaerobic SCP production	Low	None.
Feed recycle process	Low	Fiber.
Oxidation ditch	High	Sludge, liquid.
Activated sludge	High	Sludge, liquid.
Wastelage	Low	None.
Anaerobic fuel gas	Low	Sludge.
Fly larvae production	Low	Compost.
Biochemical recycle	Low	Fiber.
Conversion to oil	Low	None.
Gasification	Low	Ash.
Pyrolysis	Low	Ash.
Incineration	Low	Ash.
Hydrolysis	Low	None.
Chemical extraction	Low	Liquid.
Runoff control	Low	Liquid, solids.
BLWRS	Low	None.
Lagoons for treatment	Low	Sludge, liquid.
Evaporation	Low	Sludge.
Trickling filters	Low	Sludge, liquid.
Spray runoff	Low	Grass, liquid.
Rotating biological contractor	Low	Sludge, liquid.
Water hyacinths	Low	None.
Algae	Low	None.

FOREIGN MARKETS AND ECONOMIC STUDIES

There is again a paucity of information throughout the economic analysis which could be used to relate the impact of these industrial limitations on foreign trade and on either the import or export markets. The Committee would be interested in these relationships particularly in those industries in which foreign trade presents an already recognized competitive market, that is, e.g., textiles, iron and steel, pressboard, seafood, beef, et al. The aforementioned and described items were among the major concerns of the Committee in its first phase of this operation.

Example: Paragraph 4 of November 30, 1973 letter from the Department of Commerce, Richard Roundtree, Assistant General Counsel for Legislation, to Russell E. Train, Administrator, EPA.

"Failure to Develop Significance of International Trade:

"The economic analysis prepared for EPA by A. T. Kearney, Inc., examines, but does not bring out the importance of, the maintenance of U.S. productive capacity of ferroalloys in the light of international trade. Imported ferroalloys represent significant shares of U.S. consumption in 1971 and 44 percent in 1972. Ferromanganese imports, including silico-manganese, have ranged between 19 percent and 27 percent of U.S. consumption since 1967. Disruptions or losses in U.S. productive capacity will increase our reliance on imports and adversely effect our international balance of payments."

E.S. & W.Q.I.A.C. ALTERNATIVE METHOD PROPOSAL TO EPA

Recognizing early in the operation that this subjective qualitative contractor's method would place this economic burden on the non-exemplary facilities, E.S. & W.Q.I.A.C., at its initial meeting, began planning and developing a more objective mathematical, quantifiable methodology for working out the limitations.

Reproduced from
best available copy.

MATRIX METHOD IN DETAIL

The Matrix Method, as the mathematical approach has been called, is described in the following article which appeared in the Environment Report in September 1973.

MATRIX APPROACH

A new matrix approach for establishing effluent limitations under the Federal Water Pollution Control was developed by E.S. & W.Q.I.A.C. and presented to EPA Administrator, Russell E. Train September 26.

The new method entails a modification of the guidelines based on state-of-the-art waste water treatment technology. In addition to current subcategorization of industries, considerations which affect an individual industrial operation are included in mathematical models used to establish as best practicable technology. The current data base available from EPA and industry serves as a baseline for establishing raw waste load. The baseline is modified as additional data are generated and as predictive models of treatment technology are improved.

The subcategorization of industries considers four constraints on effluent standards of performance. These include treatment technology, operational characteristics, economic equity, and geographic and climatic considerations.

A chart demonstrating subcategorization of the 27 industries specifically mentioned in the Water Act in accordance with the four variables follows:

Industry	A[1]	B[2]	C[3]	D[4]	None
Pulp and paper	X	X	X	X	
Soaps and detergents				X	
Textiles	X	X	X	X	
Seafoods	X	X	X	X	
Timber	X	X		X	
Fruits and vegetables	X	X	X	X	
Leather	X	X		X	
Phosphate manufacturers		X	X		
Meat products			X	X	
Steam electric	X	X	X	X	
Rubber	X	X		X	
Ferroalloys	X		X		
Asbestos and glass					X
Fiberglass					X
Beet sugar			X		
Cane sugar		X	X	X	
Cement			X		
Dairy			X	X	
Electroplating		X		X	
Feedlots			X		
Fertilizer			X		
Grain milling		X			
Flat glass					X
Iron and steel	X	X		X	
Inorganics	X	X	X		
Organics	X	X	X	X	
Nonferrous metals (bauxite)					X
Plastics	X	X	X	X	
Petroleum	X	X	X	X	

[1] A—treatment technology.
[2] B—operational characteristics.
[3] C—geography, climate.
[4] D—economic equity.

For each of the subcategories within an industrial classification, effluent limitations are developed as follows:

(1) The raw waste load and waste water flows per unit of production for a subcategory is established statistically on the data base. One standard deviation of the industrywide waste water flows is used for computation. Plants with water use in excess of this limit are expected to attain this amount by in-plant conservation practices.

(2) Best practicable technology for a subcategory is selected.

(3) The average effluent quality attainable is determined from process models reflecting present exemplary performance.

(4) The average effluent limitation in pounds of pollutant per unit of production is the product of (1) and (3).

(5) Effluent variability is defined by considering process operating temperature, variation in raw waste load, and variation inproduct mix.

The matrix provides a quantitative, technically sound basis for subcategorization of industrial categories which is necessary to insure that effluent limitations are consistent with the requirements of the Act and realistically achievable by classes and categories of point sources.

Execution of the procedure minimizes controversy and litigation that may result from "arbitrarily established inflexible standards."

EFFLUENT STANDARDS MODEL DEVELOPMENT

E.S. & W.Q.I.A.C.'s steps for development of an effluent standards model are as follows:

(1) Develop statistical plots of raw waste load and flow for an industrial category. Determine if size, age, or type of process has a major effect and if so break the statistical plots accordingly. Eliminate plants which have extensive water reuse or product recovery not normally practiced in the industry. Base line flow/unit production is one standard deviation from the mean.

(2) Determine from waste water treatment operating data on best practicable technology if the waste water characteristics have an effect on process performance under optimal design operating conditions. If so, categories should be established with appropriate effluent qualities.

(3) Define operation characteristics of the industry. Establish effluent qualities for each grouping.

(4) Delineate geographical and climatic effects. Best practical technology in some cases can be defined by area if spray irrigation or evaporation ponds are applicable. However, in all cases an alternative for discharge using waste water treatment should be considered because land availability or cost could mitigate against land disposal. Waste water characteristics, particularly temperature, should be considered.

(5) For each of the groupings defined in (1), the cost of compliance/unit production should be generated. Best practicable technology is defined and costs are computed by selecting the large plants with prevalent technology. Processes are selected and effluent quality defined for each grouping considering a reasonable cost equity.

(6) As additional data is complied, it would be added to the data base for current best practicable technology. Treatment models would be updated as the state-of-the-art advances.

DEFINITIONS OF TERMINOLOGY IN PUBLIC LAW 92-500

Basic issues relative to the definition and philosophy stated by the agency in the original Water Strategy Paper as well as working definitions and terminology used was subject to much Committee discussion during this first year. The question arose as to the difference between a limitation and a guideline. The Committee has accepted the definition that guideline refers to the method and the limitation refers to the number. And in September 1973 the Committee requested and received a legal opinion from William A. Anderson, II, of Hunton, William, Gay & Gibson law firm, in support of these definitions and so advised the Administrator.

The identical point that limitations and guidelines are different has been raised in several of the suits that have been filed against the agency. One of these is E. I. DuPont de Nemours and Company, et al. v. Russell E. Train, et al., No. 74–57 in the United States District Court for the Western District of Virginia. The plaintiff cites an intra-agency legal memorandum of February 25, 1974 as proof that the agency recognizes the guidelines and limitations are not the same. The memo states that "the effluent limitations guidelines which the agency is presently issuing under Section 304(b) are also being issued under Section 301, and establish effluent limitation under Section 301 * * * the effluent limitations guidelines promulgated by the Agency will implement both Section 301 and 304 * * * it would be impossible to challenge section 301 limitations without challenging the Section 304 guidelines". The point is referenced here because in September 1973 the Committee proposed that the Agency publish the Matrix Method as the guideline, meet the deadlines under the act for such publication, and allow, therefore, the necessary time for industry to collect 1 annual year data for the Matrix Method; ample time for the Matrix Method to be formalized and computerized and ample time for the Agency to incorporate the computerized Matrix program in its regional offices for permit issuance to make the 1977 deadline.

E.S. & W.Q.I.A.C.'s. Position Paper on Section 307—Toxic Materials and Industrial Effluent Limitations

TOXIC SUBSTANCE LIST COMMENT

With reference to formation of toxic pollutant list required by section 307 of Public Law 92-500, the committee makes the following recommendations concerning the basis for inclusion on the list:

(1) Any toxic substance demonstrated to affect aquatic organisms adversely should be included provided that (a) adequate experimental data are available to set safe limits and (b) accumulation of materials to unsafe levels for the organism or to other organisms higher in the food chain have been demonstrated.

(2) Substances should not be excluded from the list because of uncertainty concerning problems of monitoring.

(3) Materials related to human health should not be included on the list unless their relationship to aquatic organisms is demonstrated or detrimental accumulation in human food of aquatic origin has been shown.

(4) Human health concerns with toxic materials in water should be dealt with through established drinking water standard.

(5) Toxic effluent limits which would be more restrictive than best practical treatment should be adjusted in accordance with water quality standards in receiving waters.

(6) Substances which after discharge to water form, through chemical or biological means, toxic materials as outlined above should be included on the list.

In summary, the toxic list should include all materials demonstrably detrimental to aquatic life where sufficient data are available to set safe limits in the receiving water. Where toxic substances have insufficient discharge from point sources to constitute a hazard regardless of effluent strength they should not be included.

POSITION PAPER OF E.S. & W.Q.I.A.C. ON TOXIC SUBSTANCE REGULATIONS

E.S. & W.Q.I.A.C. has considered the materials on the toxic substance list authorized in section 307 of Public Law 92-500 in the light of several hearings, basic data available to the committee, and comments from industry. The committee would like to draw several considerations to the attention of the Administrator and to present its comments with reference to this important requirement of the law. These comments are submitted for possible future guidance and have not been formulated with reference to legal interpretations of section 307 or administrative and implementation restraints.

1. Adequate research has not been done on some of the materials proposed for a toxic list to insure accurate evaluation of their toxicity to aquatic, terrestrial, and human life when these materials are released in water.

2. Available data on some materials indicate that biomagnification in fish and invertebrates can far exceed levels tolerable for human or animal consumption although concentrations in water may be below levels detecable by usual field chemical procedures.

3. For some materials (cyanide) field chemical procedures are not available to give accurate assessment of the toxic form (HCN) and, further, the proportion of total cyanide which is made up of HCN cannot be predicted accurately when certain compounds subject to photodecomposition (ferrocyanide) are in the effluent. Turbidity, water color, temperature, pH, amount of sunlight, and time of day may alter the amount of HCN present.

4. A sliding scale of effluent limitation based on the degree of dilution places differential economic burden on dischargers depending on geographic location; further, increased effluent discharge based on amount of dilution in the receiving water will not necessarily protect organisms from the biomagnification alluded to above.

5. Rigid enforcement of effluent standards which guarantee absolute protection of all aquatic, terrestrial, and human life and prevent significant biomagnification has the potential of shutting down important segments of industry, particularly if present stipulated compliance deadlines are observed.

6. The requirements of best available tretament (BAT) of effluents by 1983 will satisfy most objectives of 307 by that date and application of best practical treatment (BPT) will minimize some problems.

In view of the considerations outlined above, the committee submits the following comments.

1. Effluent standards for toxic substances should be based on a preponderance of scientific evidence demonstrating effects on humans, terrestrial animals, or aquatic life depending on which group will be affected by the discharged materials.

2. It should be clearly stated and justified in support documents that effluent standards for particular materials are predicted on protection of human, terrestrial, or aquatic life, since concentrations affecting one group adversely may be essentially harmless to another.

3. Effluent standards should be based on total weight of material discharged rather than concentration since additive loadings from a series of plants could cause undesirable stream loadings regardless of the dilution factor.

4. Where potential biomagnification in fish and subsequent ingestion by animals or humans is the basis for establishment of an effluent standard demonstrated levels of accumulation should be established before promulgation of the standard.

5. Materials for which removal technology is not available should be omitted from the toxic list unless detriment to humans, terrestrial animals, or aquatic life at probable levels of ingestion of fish or invertebrates or direct exposure is demonstrated by a preponderance of scientific data.

6. The time limit for compliance should be extended sufficiently to permit installation of available removal technology.

NOTE: Additional documents attached to this submission, including an outline of E.S. & W.Q.I.A.C.'s Work Plan for 1975 and a summary of E.S. & W.Q.I.A.C.'s activities and accomplishments, is being retained in the files of the Subcommittee.

STATEMENT OF RAMÓN M. GUZMÓN, MEMBER EFFLUENT STANDARDS AND WATER QUALITY INFORMATION ADVISORY COMMITTEE, ENVIRONMENTAL PROTECTION AGENCY, WASHINGTON, D.C.

Not until the U.S. Congress approved the Water Pollution Control Act did this country have a clearly defined public policy in regard to the laws of protection of the environment. Before this law was approved there was indiscriminate use of the environment. At that time the legislative actions requiring a defined public policy were concerned with a relatively uncontrolled growth, and the effects on the environment were of secondary importance or consideration.

The Water Pollution Control Act, with its 1972 Amendments, defined a clear public policy on the environment. However, in attaining its goal, other programs with a defined public policy have been affected, as the different legislations tend to parallel each other. The strict application of the public policy without consideration for other programs has resulted in areas where various legislations have conflicted. Specifically, overprotection of the public policy has affected the legislative intent of the environmental laws, although the Act is necessary to preserve our environment and has as its goal the maximum utilization and good use of our natural resources.

One of the most important ways to attain the objectives of P.L. 92-500 is to develop effluent guidelines for industrial source categories as defined in Section 304(1)(B) of the Act. The development of these guidelines needs the consideration of three basic elements, namely, (1) environmental considerations, (2) economical considerations, and (3) non-water quality considerations.

If too much emphasis is placed on environmental considerations, the cost of such application and its impact on industry is notable. The higher the degree of removal required, the greater will be the cost. On the other hand, if more emphasis is placed upon the economic aspects of the action, then the environmental considerations will not be sufficient. As well, the higher the economic considerations, the higher will be the non-water quality aspects of the proposed action.

Good, adequate effluent guidelines require a balance between these three aspects, giving equal importance to each one. In my opinion, the effluent guidelines that have been recommended in the Contractors' report and by the EPA in many cases tend to overemphasize the environmental aspects of the action. This will result in excessive cost to industry and Government. Most affected would be the small industry.

The Act mandates the promulgation of these standards for BPCTCA in one year. This time limitation imposed by Congress is in many cases too stringent, considering the thorough investigations needed and data required. This has led to the development of guidelines which have been subject to criticism. The EPA developed the guidelines as required by the Act, but had to use data from limited studies made over a short period of time.

There have been other difficulties with the proposed standards. Some of the guidelines have been developed based on pilot plant studies, technology transfer even from foreign countries, but which are not based on proven technology or practical operations for the specific waste under study. The unproven technology should not be relied on as the basis for achieving effluent limitations.

Perhaps one of the main difficulties, and which has resulted in strong criticism, is the percent reduction required to be attained from the raw waste load entering the process plant. In many cases reductions of 95, 98, and even 99.8 percent have been required. It is possible that the data on raw waste load, which is of utmost importance to develop the effluent guidelines, has been developed with insufficient data which is not representative of the plant operations. But even if the data is not sufficient, high removals have been proposed, in may cases over 59 percent.

There is an axiom which states that there is no such thing as a bargain in water pollution control or waste water treatment. But certainly the limitations requiring over 95 percent reduction of the organic load of the industrial effluents will keep up a cost so high that will result in the closing of many industries in this country, especially the small ones. The problem is how to apply the conditions of rigidity and how these will affect the small industrialist who can not attain the 95 plus percent. reduction. To quote words from the late Justice Earl Warren, "we are participants in the living stream of our national life, steering the law between the dangers of rigidity on the one hand and the formlessness on the other. Our system faces no theoretical dilemma but a single continuous problem : How to apply them to ever changing conditions."

But more recently President Ford, on August 15, 1974, stated that the timetable for achieving environmental goals must be re-examined in light of cost and their impact on an unsteady economy.

Former President Nixon too had some reservations on the law when in his veto message to Congress he indicated the following :

"I am also concerned, however, that we attack pollution in a way that does not ignore other very real threats on the quality of life, such as spiraling costs and the increased onerous taxes. Legislation which would continue our efforts to raise water quality but which would do so through extreme and needless overspending, does not serve the public interest".

It is, in my opinion, the dangers of rigidity to which Judge Warren referred when applying the same principle to other forms of daily life, that has resulted in an overprotection of the environment. This interpretation of policy imposed by Congress that has led to the very restrictive limitations suggested in the Contractors reports and the EPA.

The Best Practicable Control Technology Currently Available should be postponed, and I understand this is also the feeling of Congress and the OMB, to a more realistic date. The time restraints imposed by Congress on EPA, Contractors and Industry may result, as has resulted, in effluent guidelines which may not necessarily be the best for the overall protection of the environment and intent of the law.

In my opinion, one of the points which has resulted in poor guidelines is the fact that these apparently have been developed with the feeling that Industry will not be honest and may hide data and operations from the EPA. This is the case of several industries. One example is the metal plating industry, in which the guidelines have been developed in terms of milligrams per unit of surface area to prevent the Industry from adding water to reduce the concentration of the metallic ions generated from the plating operations. In so doing, it will be very difficult to apply the guidelines, and impossible in some segments of this Industry. But the example is not limited to the metal finishing industry.

The approach for the Contractor and EPA, in my opinion, should be to attack the problem with the idea in mind that Industry wants to cooperate, not that Industry is going to mislead everyone. It has been our experience in the workshops our Committee has conducted and which have attracted representatives from all parts of the country, that Industry is aware of its responsibility for protection of the environment, and that they want and intend to maintain a clean environment. They also know that this will result in increased operation costs. But Industry does not want to spend funds to attain guidelines that are so stringent that even after building a modern process waste plant could not attain the goals imposed by the guidelines. These restrictive limitations can be compared to designing the structural of a building with a safety factor of 4 or 5 to be sure that it will not fall down.

Most of us believe that the Act needs several changes, and I feel that some sections need revision to adapt them the more realistic aspects, not only for Industry, but as well for Industry-Government regional plants, and for municipal owned public utilities. It is also my opinion that some sections of the Act should not be applied "across the board" to all situations throughout the U.S. and its overseas states and territories. Although the effluent guidelines should allow categories to account for geographical, climatological, economical, age of plant and other factors, not always have these been applied in a reasonable way to all segments of Industry.

The waste water treatment requirements of the Act are based mainly on the reduction and elimination of the organic load. Secondary treatment is mandatory for all States. The requirement by the EPA to reduce the organic load of domestic and industrial waste waters, at times over 95 percent of its organic load is too restrictive.

But are we protecting the environment by requiring such high reduction in the organic content of the industrial waste water? The diminishing returns and environmental tradeoffs inevitably results from higher waste water treatment goals. As more and more pollutants are removed from the waste stream, the road of "progress" toward further refinement becomes steeper and more hazardous until eventually more pollutants will be indirectly released to the total environment. These indirect pollutants arise as sludge, atmospheric emissions, land use, energy consumption. This point was brought out by Dr. Frank Schaumburg, of Oregon State University, at the recent meeting of the International Association on Water Pollution Research held at Paris last September. This same theory has been termed by Dr. Joseph Ling, from the Minnesota Mining and Manufacturing Company, as the "negative environmental balance".

Although I am not an economist, I am not in agreement with the approach being utilized by the Contractor and the EPA to estimate the cost of application versus the benefits to the environment. The actual criteria is to establish the needed goals based mainly on percent reduction of BOD, and then estimate how much the cost to Industry will be, and how many plants would shut off operations because of the economic burden. In my opinion, the economic considerations should be based on the cost of a reasonable degree of reduction, say 85 or 90 percent BOD, and then determine the cost to attain the extra percent reduction. After the 90 percent organic reduction, the cost should be balanced against the pounds of BOD, or suspended solids, or whichever parameter applies to the particular industry, of the extra reduction to be attained. If we study all the Contractor's reports, we see that in most cases the reduction of a few pounds of BOD, will result in very high costs to industry. There is one case, in which it will cost industry, according to the economic report, about $1 million to reduce 10 pounds of BOD a day. Why not, at least in best practicable control technology currently available, or for best available technology, realize that Nature should take a small part of the load, and set the goals at the practicable level of BOD reduction? This will result in parallel progress of the two public policies, which would attain the necessary degree of industrial progress and at the same time protect, but not overprotect, the environment. In the other way, we will attain what Dr. Ling terms as the "negative environmental balance", which will also constitute the end of operation for many industries in the country. Prof. Jack Borchard, of the University of Michigan, has termed the cost to attain the restrictive limitations imposed as a contributor to inflation. And certainly it is not our intent to help inflation in any way.

The Water Quality Strategy Paper prepared by the EPA and released last March states as follows:

"Common sense dictates that the economic and environmental effects of a course of action should be considered together, and that there should be a regular comparison of these with the costs and benefits of other courses of action".

But it seems to me that the requirement for such high degree of treatment and reductions to be attained obviously will have a great economic burden that could not be termed as a "regular comparison of these with the costs and benefits of the action proposed."

The goals to be achieved should be reasonable, and practical so that a good evaluation could be made of the costs and benefits.

One specific example is the report for the sugar industry in Hawaii. It costs $0.91 million to attain a 17 percent BOD reduction, and $3.8 million to attain an additional 7.9 percent. Total for 33 percent reduction is $4.8 million, while the cost for a 90 percent reduction is $8 million, plus $3.7 million per year to operate the plant. The cost of $4.8 million is higher than the actual cost of the sugar-mill and the operation expenses of $3.7 million per year is higher than the profits that the sugar mill would have in one year. To this, add the 12 percent plus interest on funds to be borrowed for the process waste plant. This is one example in which apparently the costs of reduction compared with the benefits to be attained have not been adequately considered.

It is correct that there are existing plants which attain a 92-95 percent reduction. It is possible to attain this goal in some cases, depending on the nature of the waste under treatment. The EPA regulations require that the reduction to be attained be maintained 29 out of 30 days. But are we always correct 29 out of 30 days, or 96.7 percent of the time? There is a shortage of good plant operators in the country, and elsewhere. To require that plant operators be that sharp nearly all the time is to impose a fact that is out of reality. The environment will be more protected if we realize that it is more difficult to run a plant to attain a certain goal, than draw figures at a desk on what the operations can attain.

I have thought many times that maybe the Act may not need as many amendments as people think. It is a matter, in my opinion, of a more down to earth approach, realizing the problems to be imposed on Industry and the community. Make a sensible approach to the protection of our environment and realize the economic aspects of the actions.

In certain States where the regulations for water quality were developed by the States and approved by the EPA consideration was not given to the cost of such application. Good engineering, good judgment, and good sense means the consideration of all factors involved for the application of a given action. To consider the result of a given action as the protection of the environment, and then not consider how much such action will cost and what the non-water quality considerations are, reflects, in my opinion, poor engineering, poor judgment, and poor sense.

Sometimes I think when these effluent guidelines were prepared, and when it is said the economic aspects of the action have been studied, they refer only to the plants studied and do not reflect the total cost of such action.

I do not believe that any report which calls for 95 percent plus of reduction of BOD has given full considerations to the non-water quality aspects of the proposed action.

There are some aspects of the law that should change. For example, the application of secondary treatment "across the board". In some coastal municipalities it is possible that the environment will be best protected by a primary treatment plant with an ocean outfall after studying the oceanographic considerations, and solving them on a case by case basis. I understand this House Subcommittee is studying this point, and I hope it will be accepted.

It is not my intent to criticize the Contractor, or the EPA people whom I know have been very dedicated in the very difficult task that the U.S. Congress has imposed upon them. It is not an easy assignment, nor has the responsibility that I and all the members of the ES&WQIAC have accepted. I am very honored to be a part of the Committee and help in whatever I could according to the limitation of my abilities. I think, and suggest, that a different, more realistic approach be given to the application of the law. To summarize my recommendations, these are as follows:

1. Consider the economic impact by analyzing the cost of the extra reduction to be attained after an adequate degree of reduction has been obtained. In other words, do not "overdesign".

2. Give full weight to the non-water quality considerations when the guidelines require over 90 percent reduction.

3. Study changes in law or legislation which would prevent the application "across the board" of the legislative mandate.

4. Study ways to prevent the use of numbers as guidelines. The matrix approach suggested by ES&WQIAC is, in my opinion, a good approach and follows the legislative intent.

5. The imposition of expensive waste water treatment techniques which have not been adequately proven and utilizing technology transfer may not be adequate. As well, the application of technology from foreign countries may not be adequate for the conditions of the U.S. Guidelines should not be developed based on laboratory pilot tests under controlled conditions.

6. Give more time to Industry for the application of the BPT and BAT technologies.

7. Consider primary treatment plants with extended ocean outfalls for coastal municipalities on a case-by-case basis.

8. Have in mind other programs of defined public policy when defining effluent guideline limitations.

Statement of Don E. Bloodgood, Member Effluent Standards and Water Quality Information Advisory Committee, Environmental Protection Agency, Washington, D.C.

Your request to participate in the discussion on PL 52–500 is an honor gratefully acknowledged.

The comments that I am about to make are my personal opinions and not necessarily the opinions of the other ES&WQIAC members.

The wording of the law and the two volumes "History of the Water Pollution Control Act Amendments of 1972" are helpful in understanding the basic intent of the Congress but I have not found written what I believe to be the real objectives.

It seems to me that the Congress might have said ,though ; "We are convinced that pollution of our streams is demanding attention and even though some progress has been made in the last 50 years in the correction of the situation something must be done *now*. We will therefore establishes dates of compliance, 1977, 1983, and 1985, thereby indicating a stepwise approach to the solution of the problem. We know that there are some industries that are doing a reasonable job of waste treatment now, we want all industries to be doing as well by 1977. By 1984 we think that applied technology will make it possible to do even a better job of waste treatment. By 1985 if discharges can be practically eliminated we hope that this will be the case".

It is often dangerous to use percentage removals in talking about waste treatment but I am going to use several figures to illustrate what I think the Congress might have had in mind. If by 1977 85% removal of pollutants by everyone was attained there would be a remarkable improvement in the streams of the nation. If by 1983 a 95% removal was demanded there would be high quality water in most localities. Did the Congress really mean "zero discharge"? Zero means to an engineer, absolutely none, and there are no methods of analysis that can accurately determine that there is a minute quantity or zero.

I am aware that laws that are written so specifically that an administrator has no chance for use of his judgment, become very difficult to enforce. PL 92–500 leaves to the administrator the interpretation of BPT, BAT and zero discharge.

Various people have made their interpretation of the meaning of the words used in the law and there are as many interpretations as there are individuals making the interpretations.

It does seem that the Congress did recommend that the "Act (Sec. 304) shall include consideration of the total cost of application of technology in relation to the effluent reduction benefits to be achieved from such application, and shall also take into account the age of equipment and facilities involved, the process employed, the engineering aspects of the application of various types of control techniques, process changes, non-water quality environmental impact (including energy requirements), and such other factors as the Administrator deems appropriate".

At the time the ES&WQIAC was formed the activities for the preparation of the "Guidelines" had been in progress for some time. At an early meeting of ES&WQIAC I remember stating that in my opinion the "Guidelines" should have a preamble that states that anyone using the "Guidelines" should always temper them with a consideration of the factors stated by the law.

I am still of the same opinion and I wish that there was some way to say to those persons who write permits that they must take into account many factors important to the particular situation.

In the establishment of effluent standards it is a useless expenditure of national monies to require effluents that are better than need be at particular locations. It is wrong to spend money simply for the sake of being able to say the treatment is being done as required.

It seems unreasonable to have the same requirements apply to all locations, states, etc. simply to have uniformity of "Guidelines", "Categories" when there is non-uniformity between Categories and Guidelines. As an illustration, the 1977 requirement for TSS for the Unbleached Kraft and subcategory is 6.0 pounds per ton and for the Sodium Based Neutral Sulfite Semi-Chemical the requirement is 5.5 pounds per ton. I am attempting to show a lack of uniformity between similar industries.

In the early days of the ES&WQIAC it became very apparent that there was a lack of assembled data on the raw waste loads generated in the production of the outputs from the 27 industries listed in the law. The Committee held 58 Workshops, 12 Public Hearings and 16 Committee Meetings that were open to the public. There were numerous contributors of information and there is no doubt in my mind that the new or unearthed data had impact in the formation of the "Guidelines". The Pulp and Paper Industry was no exception and they have continued to supply information on raw waste loads and treatment accomplishment as rapidly as it becomes available.

The Committee (ES&WQIAC) suggested that it was possible to develop guideline limitation by mathematical analyses by taking into account all of the variables: age of plant, cost, energy, impact on the environment etc. It was then noted that there was, in some instances, not sufficient data to permit the mathematical analysis. Research into the possibilities of application of the mathematical approach was sponsored by ES&WQIAC. The sponsored work did show that a Mathematical Approach can be used. The method would, if used, provide guideline numbers for each plant for which a permit was being written. The conventional approach that has been used in the production of the promulgated guidelines has utilized all available data coupled with technical know-how and judgment by many to produce limitation numbers.

Industry likes the idea of the Mathematical Approach, whether they would be satisfied with the results can only be determined after this approach has been used in many instances.

There will be more time for the revision of Guidelines now promulgated and this will allow time for evaluation of the Mathematical Approach.

Time constraints established by the law PL 92-500 did not permit sufficient time for the collection of test data on all of the installations that will have to have permits.

The Congress did not provide ample time for the production of the Guidelines and as a consequence EPA had to proceed at a rapid rate. As you know EPA employed contractor consulting firms to study the literature, make surveys and write a report, on each of the industries, that showed the BPT and BAT that was dictated by their findings. These reports were hurriedly prepared and in many instances the limitations were unreasonably strict. The ES&WQIAC reviewed all or nearly all of them and reported to the Guidelines Division of EPA their opinions. The Guidelines Division and other EPA units reviewed the contractor reports, made additional investigations and eventually produced "Proposed Guidelines". The ES&WQIAC reviewed the "Proposed Guidelines" for many of the industries and met in conference with Guidelines Division personnel to ask questions and make suggestions.

To say that the Guidelines Division did not work energetically on the preparation of the Guidelines would be a mistake. To say that they were able to produce flawless Guidelines would be a mistake. Various changes were made in the "Proposed Guidelines" prior to promulgation. The ES&WQIAC has not made a study of all of the Guidelines that have been promulgated. I concluded that after they had been promulgated and published there was not much that the ES&WQIAC could do until work was started on the review prior to re-evaluation and amendments.

A review of the suspended solids limitation for the Unbleached Kraft Paper Industry shows that the maximum 30 day pounds per ton of product for BPT took the following course during the preparation of the Guidelines:

Contractors Report June, 1973, 6.0 lbs./ton.
Proposed Guidelines Jan., 1974, 9.2 lbs./ton.
Promulgated Guidelines May, 1974, 12.0 lbs./ton.

The variation from 6.0 to 12, a doubling, is not necessarily an indication of inadequate evaluation of the situation. It could have resulted from a change in opinion about "exemplary" waste treatment. In my opinion the Congress probably meant that "exemplary" plants were those that were already doing a good job and there were quite a few of these in the Paper and Pulp Industry. The Guidelines Division, at least at the outset, defined for themselves, that "exemplary" required taking the one or two best plants as the "exemplary" facilities and that all facilities should produce effluents of the highest quality. It is apparent that there has been considerable modification of opinion regarding "exemplary" plants or other factors.

All suspended solids limitations for all five categories of the Pulp and Paper Industry are more lenient in the final Guidelines than they were in the contractor's report, except in one case where the 1983 requirement was the same in the contractor's report and the promulgated Guidelines.

The real question now is: are the Guideline limitations now at a level that will prevent active defensible court actions that could stop progress in pollution control in this country? There have been reported actions in the courts but these may be only protections should the limitation be proven to be unreasonable when it comes time to write particular permits.

Much of the success of the pollution control program now is in the hands of the people who will write the permits. If they use the Guidelines as absolutely fixed law there will be trouble, objections, and delays of all kinds. If the Guidelines are used as guidelines and the EPA solicits and uses the state pollution control agencies there will be marked progress made in cleaning up the streams of this Country. Any changes that the Congress can make in the law that will direct the permit writers to use judgment in the interpretation of the Guidelines will do much to push forward the water pollution control program in which we are all interested.

The Committee also undertook the task of compiling quarterly reports for Congress following a request from Senator Jennings Randolph, of West Virginia, chairman of the Senate Public Works Committee.

In a January 8, 1975, letter to EPA Administrator Train, Senator Randolph said ES&WQIAC was being requested to submit these reports on its "activities and involvement with the Agency's current regulatory efforts". The following paragraphs are excerpts from the Senator's letter to Mr. Train:

> "An area which has concerned me in the Environmental Protection Agency's implementation of the Federal Water Pollution Control Act (P.L. 92-500) is the failure to fully utilize the Effluent Standards and Water Quality Information Advisory Committee.
>
> "I proposed section 515 of the Act, establishing that committee, because I believed the Administrator should have a source of independent information and evaluation of proposed regulatory actions, in addition to the justification prepared by the regular agency staff. This is important to assure that the Administrator is as fully informed as possible as to the technical implications of these regulatory actions. It also provides a valuable means for bringing information to the attention of the Administrator from industrial and public interest sources in a way which is consistent with an open administrative process and allows for independent evaluation of submitted data.
>
> "Unfortunately, to date the Agency has not adequately promoted the independence of the Effluent Standards and Water Quality Information Advisory Committee, nor been very cooperative in providing information, staff, or other resources necessary to the Committee's work. And, apparently, the Agency has failed to give the information and recommendations transmitted by the Committee on proposed effluent limitation guidelines, the full consideration as part of the administrative record which is required by section 515 (b) (3).

"These are all problems which I hope can be eliminated as the Agency prepares additional effluent limitation guidelines, revisions of the present guidelines, and standards for toxic pollutants. I believe that if the work of the Committee had been fully utilized from the beginning, much of the litigation involving the published guidelines could have been avoided. One key to the Agency's receiving the full benefit of the Committee's work will be the participation of the Committee from the very earliest stages of information gathering in preparation for publishing or revising any guidelines. And, of course, the agency should allocate sufficient staff and other resources to the Committee to assure its independence from the Effluent Guidelines Division (or any other branch) of the Agency.

"Because of my concern for the role of the Effluent Standards and Water Quality Information Advisory Committee in the implementation of P.L. 92-500, I will personally request the Chairman of that Committee to submit a quarterly progress report on the Committee's activities and involvement with the Agency's current regulatory efforts. This report will be in addition to a detailed annual report accounting for all the information and recommendations transmitted to the Administrator during the year."

The first such report was prepared by ES&WQIAC and submitted in March 1975.

TOXIC SUBSTANCES

The development of toxic pollutant effluent standards under Section 307 of PL 92-500 has been closely monitored by ES&WQIAC since the Committee's inception.

As detailed in the first annual report, the Committee held a series of hearings across the U.S. to enable the public to participate in all facets of the decision-making process with respect to Section 307. The Committee also submitted comments to EPA on the selection criteria and on the toxic substances list, and formulated a position paper outlining various recommendations on development of final toxic substances regulations.

In the fall of 1974, EPA announced its intention to re-propose its toxic pollutant standards under Section 307. The original proposal appeared in the Federal Register on December 27, 1973. The agency said it believed that valid scientific justification was not adequately provided for parts of the proposed standards. EPA also said its hearing record demonstrated that the original proposal had been inadequately developed and documented. ES&WQIAC completely concurred with the decision of EPA.

As discussed elsewhere in this annual report, several EPA officials made presentations at ES&WQIAC's October 31, 1974, meeting outlining the Agency's future strategy with regard to regulatory actions under Section 307.

Preceding page blank

A special task force, consisting of ES&WQIAC Chairman Martha Sager and Members Don Bloodgood, Ramon Guzman and Lloyd Smith, was established to review EPA's draft "Advance Notice of Proposed Rule-making on Toxic Substances" (ANPR). The task force met on December 12 and 13, 1974. That report which is included in its entirety in Part II of this annual report was compiled to document the findings of the task force. The report format references the page and section of the ANPR together with the corresponding ES&WQIAC comments.

SPECIAL PROJECTS AND CONFERENCES

FEDERAL AGENCY INFORMATION SOURCES:

Section 515 of PL 92-500 specifies that ES&WQIAC utilize the expertise available in the Federal agencies in order to meet the Committee's mandate as stated in Section 304(b), 306 and 307. To comply with this requirement, the Committee sponsored an interagency conference on November 22, 1974. In February 1975, ES&WQIAC forwarded to the EPA Administrator a report entitled, "Federal Agency Information Sources and Their Utilization by the EPA in Development of Effluent Limitations".

The November conference was held to assist ES&WQIAC in finding the most effective methods to meet its interagency responsibilities and to determine the quality and quantity of scientific and technical information provided by other Federal agencies to assist EPA in developing industrial effluent limitations.

Development of the conference represented an extensive effort by the ES&WQIAC staff in establishing relevent Federal Agency contacts, planning the conference and preparing the resulting report including a comprehensive list of agencies, organizations and individuals with expertise in the environmental field. Attendees at the conference included representatives from the departments of Agriculture, Army, Commerce, Interior, and Transportation, the Army Corps of Engineers, the Federal Energy Administration,

Preceding page blank

the Federal Power Commission, the National Academy of Sciences, the National Commission on Water Quality, and the National Science Foundation.

A summary of the conference discussions follows:

In order to provide these participants with the necessary background, the statutory nature of ES&WQIAC and its relationships to the environmental Protection Agency as advisor to the Administrator was discussed, and details of ES&WQIAC responsibilities and activities as directed under Section 515 of PL 92-500 to provide, assess and evaluate scientific and technical information on industrial point source discharges and toxic effluents were described.

The work plan for the session as outlined by Dr. Sager was to include:

(1) A discussion of the inputs requested from Federal Agencies by the Effluent Guidelines Division of EPA in structuring the RFP.
(2) The requests from Federal Agencies by the Effluent Guidelines Division in discussions in the methodology to be used.
(3) The request from other Federal Agencies of inputs about waste treatment types available in the different industries with which the Federal Agencies have superior knowledge.
(4) The attitudes of the Federal Agencies with regard to the water strategy paper of the Environmental Protection Agency.
(5) The impact of this changing water strategy paper in the attitudes.
(6) Implementation of water quality improvement by the Federal Agencies in their activities.
(7) The impact of the water strategy paper on permitting and regulation of industries.
(8) The impact, attitude and philosophy of the water strategy paper on toxic materials, and the future relationships of the scientists and engineers in other Federal Agencies with regard to communications with the Effluent Guidelines Division of the Environmental Protection Agency.

The session began with a discussion of the kinds of inputs which had been requested from various other Federal Agencies by the Effluent Guidelines Division of EPA in the initial phases of data acquisition and in relation to structuring both the RFP and the methodology to be used in this process. The general response was negative, there was little evidence that other agencies had been asked to contribute early technical inputs or even comment about the approach to developing effluent limitations for water quality improvement even though agencies such as the Department of Interior Fish and Wildlife Service has special expertise in the industrial area of fish ponds and hatcheries; the Bureau of Mines in ore mining and dressing; the Department of Agriculture in feed lots, fruits and vegetable processing etc.; the Department of Commerce in the economics of industry and the Federal Energy Administration in energy and non-water impacts; etc.

The discussion turned to the methodology which has been and is now being used by Effluent Guidelines Division in establishing effluent limitations for the particular industries described above. Engineering and legal difficulties in the implementation of effluent limitations as they are now structured according to the present, methodology were discussed. It was noted that promulgated effluent limitations had been appealed by most industries and that substantive questions have been raised by these industries in relation to the following items; insufficient data base, the exemplary plant concept, improper subcategorization of industries in many cases, the lack of proper consideration of the economics involved. Juridical questions were raised covering what action might result from decisions adverse to EPA. It was also noted that the 1977 deadline were already found unachievable by many industries and they may have to be thrust even further into the future depending on the outcome of these legal considerations.

At this time the discussion focused upon kinds of methodology which might be used for revisions for the 1983-85 limitations based on BAT and the fact that the data to be used gathered is so extensive and will continue to be evermore increasing in volume that possibly a mathematical computer approach should be recommended to the agency. The ES&WQIAC Committee's mathematical model for industrial subcategorization was discussed briefly in connection with the fact that mathematic computer methodologies are being developed on a national scale in the area of water quality and the environmental analyses. The National Commission on Water Quality has contracted for several models to analyze the effectiveness of the implementation of PL 92-500. Use of models by the NCWQ included the following areas:

1. Description and analysis of present water quantity and quality
2. Projections of GNP and Government Income and Expenditures through 1985 as a basis for examining economic and other impacts using, among other approaches:

    a. A national econometric model, INFORUM
    b. An environmental impact cost-benefit model, SEAS
    c. Studies of technological change as a function of economic and technical considerations
3. Analysis of Economic and Social Impacts
4. Environmental Impact Assessment
5. Special Institutional Studies

The ES&WQIAC Committee has recommended to the Office of R&D of the Environmental Protection Agency that, in conjunction with both the consensus of opinion at this meeting and with the known philosophy of ES&WQIAC in relation to the utilization of mathematical models and computer programs for the development of industrial effluent limitations that the R&D Office undertake a complete review of the ES&WQIAC "matrix" as well as any other mathematical models which may be available and begin to develop a computer program for use by the agency in the future for developing effluent limitations for point source discharges.

Although the Federal agencies have not had input directly to Effluent Guidelines Division at the early stages of the document preparation, all agencies have been receiving the rule-making packages or final documents prior to their promulgation in the Federal Register and have been asked to comment on these. The group as a whole expressed concern that the principal inputs of their respective agency were made at the final stages of review too late in the process for effective changes to be implemented. They expressed concern that the rule-making package for their evaluation is received with such a short time frame that adequate technical analyses cannot be carried out. For this reason many agencies decided not to respond at all rather than send back hastily derived analyses. Several persons indicated to their knowledge no request for comments on the rule-making package had been received by their agencies and that no requests of any kind had been made by EPA at any level. Accordingly, the development process of industrial point source limitations on the 27 major generic industries which have been studied extensively by these Federal agencies had been accomplished without any input whatsoever from the scientists and technical personnel in these agencies. The individuals at the meeting were enthusiastic however about the possibilities of participating with ES&WQIAC at an earlier stage in the development and participants at this meeting were enthusiastic about the ES&WQIAC early input flow chart which insured external input to the Effluent Guidelines Division at the initial contractor's appointment stage. The flow chart with the addition of the Federal agencies is shown as an attachment.

Then the discussion centered on EPA's water strategy paper as central to the entire issue of effluent limitations from establishment of the limitations through to compliance monitoring. It was noted that the rational set forth in EPA's initial water strategy paper had completely redirected attention from water quality analyses and monitoring for national management to focus on individual industrial point source and non-point source discharges. This approach apparently dismayed many of the Federal agencies and caused them to relinquish the prior interest they may have displayed. Many felt that the water strategy paper of EPA and the water quality issues facing the nation had gone separate ways, and that communicaion with the agency on the subject was non-productive.

Additionally, participants interpreted certain definitions formally thought to be specific for such words and phrases as navigable waters, potable water, drinking water, water for recreational purposes, zero pollution discharge and other words as being less clear because of current legal over-tones implied in the water strategy paper. This confusion was thought due to current focus of PL 92-500 on point source and non point source discharges rather than on water quality per se; the adoption of a water strategy paper wherein the central thrust was directed to point source control and effluent limitations; and by effluent limitations in permits which would later be based either on the promulgated regulations or by that required by the water quality of the stream depending on which was more stringent.

The next issue discussed was the EPA approach on toxic limitations. It was noted we were now back to structuring limitations on water quality and flow characteristics of the receiving stream. This combination of water quality and point source discharge approaches an apparent conflict with EPA's water strategy paper and has gone back to the initial FWQA Act. Considerable discussion on these points followed.

The final issue addressed was the issue of an appropriate working relationship with ES&WQIAC. A consensus was reached that the Federal agencies represented could plan an extremely useful role in the early stages of the effluent limitation development process. At this time technical experts from the agencies would participate in special ES&WQIAC workshops addressing fundamental approaches in methodology, establishment of sound data and information sources and critiques of plans and schedules. These early workshops would also involve elements of Federal agencies which had not formerly been involved in the later formal review processes. It was stressed that a key advantage of the proposed early interaction would be the utilization of technical expertise from many agencies without the restraints imposed by a formal agency position.

February's Federal liaison report to the EPA Administrator emphasized that the Effluent Guidelines Division of the EPA Office for Water and Hazardous Materials had not involved other Federal agencies in the development of effluent limitations.

In her letter forwarding the report to EPA Administrator Train, ES&WQIAC Chairman Sager said, "Highly qualified scientists and technologists with expertise in areas pertinent to industrial manufacturing processes and waste treatment practices have been virtually ignored throughout the initial stages of the development of industrial effluent limitations by this division of the agency despite the specific reference to their use under Section 515".

The report included the results of the ES&WQIAC staff's intensive survey of available expertise and information sources. The survey results were current in February 1975, and include designation of agencies, individuals, organization, and telephone numbers.

The following excerpts were taken from the report to the EPA Administrator. The list of information sources is printed in its entirety.

SUBJECT

Federal agencies information sources and their utilization by the Effluent Guidelines Division and Toxic Substances Branch of the Office for Water and Hazardous Materials of EPA in the development of Effluent and Toxic Limitations under PL 92-500.

AUTHORITY

In accordance with Section 515(4) of PL 92-500:

> "In preparing information for transmittal, the Committee (ES&WQIAC) shall avail itself of the technical and scientific services of any Federal agency, including the United States Geological Survey and any national environmental laboratories which may be established."

This information is being brought to the attention of the Administrator of EPA.

FINDINGS

A fall 1974 meeting of representatives from 11 agencies produced evidence that to the best knowledge of the persons present at this meeting no contact had been made by the Effluent Guidelines Division of EPA prior to the preparation of the RFP, little during the development stage of the contractor's reports, or at any other time prior to the 'Quality of Life' review of the Rule-Making packages. There was a critical omission of such professional expertise at this early information collection stage.

Further, agencies' representatives stated that insufficient time was allowed for critical review of the proposed rule-making documents (about 5 days). Therefore, many of the agencies had ignored the entire subject of Section 304(b), 306 and 307 of PL 92-500, even though the professionals within their respective units are very knowledgeable.

Therefore, the suggestion is made herein that the Effluent Guidelines Division of EPA establish effective liaison with Federal agencies and enter into dialogue with their scientific and technical personnel in the following areas:

(1) formulating effluent and toxic limitations for those industries whose effluent guidelines have not yet been promulgated;
(2) development of the toxic effluent limitation, not yet promulgated;
(3) revision of effluent limitations already promulgated and now in the Federal courts;
(4) preparing and reviewing all technical data for reconstruction of BAT on the basis of new information being generated now; and
(5) development of sampling and analytical methods and procedures to be used in effluent and stream monitoring for permit compliance.

The following list of Federal agency organizations/contacts/telephone numbers was generated and updated as of February 1975 to assist the Effluent Guidelines Division with the implementation of this suggestion.

INTERACGENCY ENVIRONMENTAL CONTACTS

DEPT. OF AGRICULTURE

Agriculture Research Service

Dr. Jesse Lunin, Staff Scientist
Environmental Quality, Room 233
Beltsville, Md. 20705 BARC W
344-3278

A. R. Robinson, Staff Scientist
National Program Staff, 237 Bldg.
BARC W
Beltsville, Md. 20705
344-4242

Plant Protection and Quarantine Programs Ecological Evaluation

Dr. Robert Williamson, Chief Staff Officer
Federal Center Bldg., Hyattsville, Md. 20782
436-8529

Soil Conservation Service

Joseph W. Haas, Asst. Deputy Admin. for Watersheds
Room 5227 S
Washington, D.C. 20250
447-3527

Forest Service

Russell Smith, Director, Forest Insect & Disease Management
Washington, D.C. 20250
445-8209

DEPT. OF COMMERCE

National Oceanographic & Atmospheric Agency

Dr. William Aron, Director, Office of Ecology
and Environmental Conservation
Washington, D.C. 20230
967-5181

National Marine Fisheries Service

Dale Evans, Chief, Environmental Assessment Division
Page Bldg. #1, Room 280, Washington, D.C. 20235
634-7490

National Bureau of Standards

Dr. John D. Hoffman, Director, Institute for
Materials Research Information
Washington, D.C. 20234 921-2828

Office of Assistant Secretary for Science and Technology

Dr. Sidney Galler, Deputy Asst. Secretary for
Environmental Affairs, Office of Asst. Secretary
for Science and Technology, Room 3425
Washington, D.C. 20230

DEPT. OF DEFENSE

Office of Assistant Secretary of Defense (Health & Environment)

Col. Ralph J. Walsh, Director, Air, Water and Resource
Recovery Programs, Room 3D171, Washington, D.C. 20301
695-5030

Henry R. Smith, Acting Deputy Asst. Secretary of Defense
(Environmental Quality) Room 3D171, Washington, D.C. 20301
695-5030

Lt. Col. John P. Meade, Director for Categorical Programs
Room 3D171, Washington, D.C. 20301
695-5030

DEPT. OF AIR FORCE

Col. Herbert E. Bell, Chief, Environmental Policy & Assessment Branch
Headquarters, USAF/PREVP, Washington, D.C. 20330
695-2889

Ervin J. Bedker, Chief, Natural Resources Office, Headquarters,
USAF/PREVP, Washington, D.C. 20330
697-2030

DEPT. OF ARMY

Col. William Gardner, Chief, Environmental Office,
Headquarters, Dept. of Army, 2CE, Room 1E676, Washington, D.C. 20310
OX 4-1163

Army Corps. of Engineers

Francis Kelly, Assistant for Conservation Liaison, HQ/DA
DAEN-PA, Washington, D.C. 20314
693-6861

Berton M. MacLean, Biologist
Chief, Fish & Wildlife Section, DAEN-WP-V/DA
Washington, D.C. 20314
693-7290

Robert Harrison, Technical Director, Institute of Water Resources
C/ENG, Kingman Bldg., Ft. Belvoir, Va. 22060
325-7420

Corps. of Engineers

* Charles Wolf, Institute of Water Resources, C/ENG
Kingman Bldg., Ft. Belvoir, Va. 22060

*Detailed: National Commission on Water Quality
254-7806

DEPT. OF HEALTH/EDUCATION/WELFARE

Dr. Theodore Cooper, Acting Asst. Secretary for Health,
Room 5067, N. HEW Bldg., 330 Independence Ave., SW,
Washington, D.C. 20201   245-6544

Dr. Ian Mitchell, Director, Special Health Projects
Public Health Service, Room 17A43, Parklawn Bldg.,
5600 Fishers Lane, Rockville, Md. 20853
443-6395

DEPT. OF HOUSING URBAN DEVELOPMENT

Richard Broun, Acting Director, Office of Environmental Quality
451 7th Street, SW, Washington, D.C. 20410   Room 7258
755-6308

DEPT. OF INTERIOR

Land and Water Resources

Jack O. Horton, Asst. Secty, Land & Water Resources
Room 6616, 18th & C Sts., NW, Washington, D.C. 20240
343-2191

Fish & Wildlife & Parks

Nathaniel P. Reed, Asst. Secty, Fish & Wildlife & Parks
Room 3156, 18th & C Sts., NW, Washington, D.C. 20240
343-4416

Energy and Minerals

Jack W. Carlson, Asst. Secty, Energy & Minerals,
Room 6654, 18th & C Sts., NW, Washington, D.C. 20240
343-2186

Asst. Secty, Planning, Program, Budget

Bruce Blanchard, Director, Environmental Project Review, Room 5311
18th & C Sts., NW, Washington, D.C. 20240
343-4344

Office of the Solicitor, Division of Conservation & Wildlife

Ms. Michele Metrinko, Assoc. Solicitor, D/Conservation & Wildlife
Room 6557, 18th & C Sts., NW, Washington, D.C. 20240
343-4344

DEPT. OF INTERIOR

Land Use and Water Planning

Lance Marston, Director, Office of Land Use & Water Planning
801 19th Street, N.W., Washington, D.C. 20240   Room 1117
343-3878

Bureau of Land Management

Curt Berklund, Director, B/Land Management, Room 5660,
18th & C Sts., NW., Washington, D.C. 20240
343-3801

Bureau of Mines

Thomas V. Falkie, Director, B/Mines, Room 4614,
18th & C Sts., N.W., Washington, D.C. 20240
343-5643

Office of Water Research & Technology

J. W. O'Meara, Acting Director, Office of Water Research & Technology
Room 5412, 18th & C Sts., Washington, D.C. 20240
343-5975

Bureau of Reclamation

Elwood A. Seaman, Asst. to Commissioner for Ecology,
Room 7622, 18th & C Sts., Washington, D.C. 20240
343-4991

U.S. Fish & Wildlife Service

Dr. F. Eugene Hester, Associate Director, Environment & Research,
Room 3251, Washington, D.C. 20240
343-5715

Fred Howard, Acting Chief, Division of Fish Hatcheries
Room 637, 1717 H Street, N.W., Washington, D.C. 20240
343-2197

Geological Survey

V. E. McKelvey, Director, Geological Survey, National Center,
Reston, Virginia 22092
860-7411

DEPT. OF LABOR

Office of Safety & Health Administration

George F. Scannel, Director, Federal Agency Safety Programs
1726 M Street, N.W., Washington, D.C. 20210
961-3130

DEPT. OF NAVY

Harold R. Richards, Soil & Water Conservationist
Naval Facilities Engineering Command
200 Stovall Street, Alex., Virginia 22332
325-0486

U.S. Marine Corps.

Charles K. Goodman, Natural Resources Management Officer,
LFF 2, HQ, Marine Corps., Washington, D.C. 20380
694-1425

James Kearns, Environmental Quality Programs Manager
LFF 2, HQ, Marine Corps., Washington, D.C. 20380
694-1425

DEPT. OF STATE

Bureau of Oceans & International & Environmental & Scientific Affairs

William L. Sullivan, Coordinator of Oceans &
Fisheries, OES/OFA, Room 3214, Washington, D.C. 20520
632-0853

Christian Herter, Jr., Deputy Asst. Secretary,
Population & Environmental Affairs, Room 7819
Washington, D.C. 20520
632-7964

Lindsey Grant, Director, Office of Environmental Affairs,
Room 7822, Washington, D.C. 20520
632-9278

DEPT. OF TRANSPORTATION

Martin Convissor, Director, Office of Asst. Secretary for
Environment, Safety and Consumer Affairs,
Room 9422, 400 7th Street, SW, Washington, D.C. 20550
426-4357

Larry Aurbach, Environmental Program Analyst
Office of Environment and Safety, TES-70
400 7th Street, SW, Washington, D.C. 20550
432-2672

William J. Burns, Director, Office Hazardous Materials
Room 6222, 2100 2nd Street, SW, Washington, D.C. 20590
426-0656

DEPT. OF TRANSPORTATION

U.S. Coast Guard

Capt. Sidney A. Wallace, Chief, Marine Environmental Protection Div.
G-WEP/P73, Room 7311, Washington, D.C. 20590
426-2010

Urban Mass Transportation Administration

George Mastor, Associate Administrator for Research & Development,
2100 2nd Street, SW., Washington, D.C. 20590
426-4052

DEPT. OF TREASURY

U.S. Customs Service

Vernon D. Acree, Commissioner
2100 K Street, N.W., Washington, D.C. 20229
964-2101

GENERAL SERVICES ADMINISTRATION

Andrew E. Kauders, Director of Environmental Affairs, PWA,
Public Service Bldgs., 18 & F Sts., Washington, D.C. 20405
343-4161

INDEPENDENT AGENCIES

Federal Energy Administration

Robert W. Sant, Asst. Admin, Energy Conservation,
Room 6448, 12th & Penn. Ave., NW, Washington, D.C. 20461
961-8656

Kenneth Woodcock, Associate Asst. Administrator,
Environment Programs, Room 7149,
Washington, D.C. 20461
961-8601

Duke R. Ligon, Asst. Admin., Energy Resource Development
Room 3502, 12th & Penn. Ave., NW, Washington, D.C. 20461
961-8471

Dr. Louis Raddis, Acting Director, Energy Research & Develop.
Room 4025, 726 Jackson Place, Washington, D.C. 20006
456-2393

Federal Power Commission

Dr. Richard F. Hill, Acting Director, Office Energy Systems
Room 4016, 825 N. Capitol St., NE, Washington, D.C. 20426
386-6525

Dr. Carl Shuster, Actg. Advisor, Environmental Quality,
Room 4016, 825 N. Capitol St., NE, Washington, D.C. 20426

Tennessee Valley Authority

Lawrence L. Calvert, Washington Representative
Room 437, 1426 H Street, NW., Washington, D.C. 20444 343-4537

Peter A. Krenkel, Director, Division of Environmental Planning,
268 401 Bldg., Chattanooga, Tenn. 37401
615 755-3161

Civil Aeronautics Board

W. Ralph Williamson, Chief, Standards Division,
Bureau of Operating Rights, Room 925, 1825 Conn. Ave., NW,
Washington, 20428
382-7921

National Aeronautics & Space Administration

Nathaniel B. Cohen, Director, Policy Analysis (Env. Impact Statements)
Washington, D.C. 20546 ADA-1
755-8433

National Science Foundation

Dr. Morris Ojalvo, Program Director, Solid & Particulate Processes
Engineering Chemistry & Energetics Section, Div. of Engineering,
Room 340, Washington, D.C. 20550
632-5867

Dr. George P. Johnson, Program Manager, Technology Assessment,
Office of Exploratory Research & Problem Assessment, Room 1110A,
Washington, D.C. 20550
632-7420

National Commission on Water Quality

Joe Moore, Program Director, 1111 18th Street, NW,
Washington, D.C. 20036, P.O. Box 19266
254-7806

National Academy of Sciences

Rafe Kasper, Environmental Studies Board, Room 826,
2101 Constitution Ave., Washington, D.C. 20418
389-6864

Nuclear Regulatory Commission

Bennett L. Harless, Technical Coordinator on Environmental Projects
Room N 353, Washington, D.C. 20555
443-6970

Daniel R. Muller, Asst. Director for Environmental Projects,
Room N 353, Washington, D.C. 20555
443-6965

Council on Environmental Quality

Dr. Beatrice Willard, Member, Environmental Quality Council
722 Jackson Place, NW., Washington, D.C. 20006 382-6265

Joseph Coates, Professional Staff Member
Office of Technology Assessment, U.S. Congress
Washington, D.C. 20510
224-6019

CONFERENCE ON RADIOACTIVE EFFLUENTS:

During its second year of operation, ES&WQIAC members and staff began preparation for a conference on radioactive effluents to be held early in the Committee's third year of operation.

In a letter of February 3, 1975, from EPA Administrator Train, ES&WQIAC Chairman Martha Sager was informed of the Agency's intention to propose effluent limitations, standards, and guidelines under Sections 301, 304, and 306 of PL 92-500 for facilities discharging radioactive wastes. Mr. Train noted that EPA believed it lacked authority to control radioactive wastes under PL 92-500 until December 9, 1974, when the U.S. Court of Appeals for the Tenth Circuit, in Colorado Public Interest Research Group, Inc. vs. Train, No. 74-1154, ruled that the agency must control these sources.

To assist ES&WQIAC in developing the scientific and technical information necessary to support any regulations on radioactive wastes, the Committee and its staff devoted considerable effort in seeking knowledgeable participants to the conference. Needed input was sought from representatives of EPA, other Federal agencies, and the electric power industry, who could be called upon to discuss the legal, administrative, and technical issues during the conference and throughout the regulatory development process.

THE MATRIX APPROACH:

Since ES&WQIAC first proposed that EPA use a mathematical modeling or "matrix" approach for establishing effluent limitations, the Committee has consistently urged the agency to incorporate this method into its regulatory development process.

The Committee believes that such a definitive approach, when fully developed, will be of considerable help to EPA in establishing effluent limitations for new industries and in providing a rapid revision of promulgated regulations as these come up for review. The methodology as it now stands has been clearly demonstrated to be a potentially very useful complement or supplement to the on-going effluent guidelines development effort.

As mentioned in the section of this report dealing with Committee meetings, much of the development and analytical work on the matrix approach has been carried out at Vanderbilt University in Nashville, Tennessee, under the supervision of ES&WQIAC Member Wesley Eckenfelder. Additional details on the matrix approach are incorporated into the Committee's report to the House Public Works Subcommittee on Investigations and Review. The report is included in the "Congressional Liaison" section of this annual report.

A comprehensive update report on the matrix approach is planned for publication in fall 1975.

REVIEW OF EPA DOCUMENTS

During its second year of operation, ES&WQIAC reviewed contractor's documents, EPA draft development documents, draft and final proposals, and rule-making packages for Group I and Group II industrial point sources.

The contractor reports formed the foundation of future work in the development of industrial effluent guidelines. Subsequent development documents, most of which were prepared by EPA's Effluent Guidelines Division, consisted of restructuring these initial draft contractors' reports with the inclusion of outside inputs and changes suggested by the division's staff. ES&WQIAC members, particularly Professor Bloodgood, analyzed these documents as well as the proposals and regulations, and transmitted their comments to EPA.

The list on the next few pages shows the industrial categories which will be dealt with by EPA and ES&WQIAC. Following the list is a chart which shows; the industrial category, the part in Chapter 40 of the Code of Federal Regulations under which the standards will be published, and ES&WQIAC's calendar of review activities. ES&WQIAC's specific comments and recommendations on all documents reviewed between March 2, 1974, and March 1, 1975, are included in Part II of this annual report.

Preceding page blank

EFFLUENT LIMITATIONS GUIDELINES AND STANDARDS, GROUP I INDUSTRIAL CATEGORIES

1. **Dairy Products Processing**
   - Subcategory A - Receiving Stations
   - Subcategory B - Fluid Products
   - Subcategory C - Cultural Products
   - Subcategory D - Butter
   - Subcategory E - Cottage Cheese & Cultured Cream Cheese
   - Subcategory F - Natural & Processed Cheese
   - Subcategory G - Fluid Mix for Ice Cream & Other Frozen Deserts
   - Subcategory H - Ice Cream, Frozen Deserts, Novelties, & Other Dairy Prod.
   - Subcategory I - Condensed Milk
   - Subcategory K - Condensed Whey
   - Subcategory L - Dry Whey

2. **Grain Mills**
   - Subcategory A - Corn Wet Milling
   - Subcategory B - Corn Dry Milling
   - Subcategory C - Normal Wheat Flour
   - Subcategory D - Bulgar Wheat Flour
   - Subcategory E - Normal Rice Milling
   - Subcategory F - Parboiled Rice Processing
   - Subcategory G - Animal Feed
   - Subcategory H - Hot Cereal
   - Subcategory J - Wheat Starch and Gluten

3. **Canned and Preserved Fruits and Vegetables**
   - Subcategory A - Apple Juice
   - Subcategory B - Apple Products
   - Subcategory C - Citrus Products
   - Subcategory D - Frozen Potato Products
   - Subcategory E - Dehydrated Potato Products

4. **Canned and Preserved Seafood Processing**
   - Subcategory A - Farm-raised Catfish Processing
   - Subcategory B - Conventional Blue Crab Processing
   - Subcategory C - Mechanized Blue Crab Processing
   - Subcategory D - Nonremote Alaskan Crab Meat Processing
   - Subcategory E - Remote Alaskan Crab Meat Processing
   - Subcategory F - Nonremote Alaskan Whole Crab & Crab Section Processing
   - Subcategory G - Remote Alaskan Whole Crab & Crab Section Processing
   - Subcategory H - Dungeness & Tanner Crab Processing
   - Subcategory I - Nonremote Alaskan Shrimp Processing
   - Subcategory J - Remote Alaskan Shrimp Processing
   - Subcategory K - Northern Shrimp Processing in the Contiguous States
   - Subcategory L - Southern Nonbreaded Shrimp Processing in the Contiguous States
   - Subcategory M - Breaded Shrimp Processing in the Contiguous States
   - Subcategory N - Tuna Processing
   - Subcategory O - Fish Meal Processing
   - Subcategory P - Alaskan Hand-Butchered Salmon Processing

Subcategory Q - Alaskan Mechanized Salmon Processing
Subcategory R - West Coast Hand-Butchered Salmon Processing
Subcategory S - West Coast Mechanized Salmon Processing
Subcategory T - Alaskan Bottom Fish Processing
Subcategory U - Non-Alaskan Conventional Bottom Fish Processing
Subcategory V - Non-Alaskan Mechanized Bottom Fish
Subcategory W - Hand-Snucked Clam Processing
Subcategory X - Mechanized Clam Processing
Subcategory Y - Pacific Coast Hand-Shucked Oyster Processing
Subcategory Z - Atlantic and Gulf Coast Hand-Shucked Oyster Processing

5. Sugar Processing
   Subcategory A - Beet Sugar Processing
   Subcategory B - Crystalline Cane Sugar Refining
   Subcategory C - Liquid Cane Sugar Refining
   Subcategory D - Louisiana Raw Cane Sugar
   Subcategory E - Florida & Texas Raw Cane Sugar
   Subcategory F - Hilo-Hamakua Coast of the Island of Hawaii Raw Cane Sug. Ind.
   Subcategory G - Puerto Rican Raw Cane Sugar Processing

6. Textile Industry
   Subcategory A - Wool Scouring
   Subcategory B - Wool Finishing
   Subcategory C - Dry Processing
   Subcategory D - Woven Fabric Finishing
   Subcategory E - Knit Fabric Finishing
   Subcategory F - Carpet Mill
   Subcategory G - Stock & Yarn Dyeing & Finishing

7. Cement Manufacturing
   Subcategory A - Nonleaching
   Subcategory B - Leaching
   Subcategory C - Materials Storage Piles Runoff

8. Feedlots
   Subcategory A - All Subcategories Except Ducks
   Subcategory B - Ducks

9. Electroplating
   Subcategory A - Electroplating of Common Metals
   Subcategory B - Electroplating of Precious Metals
   Subcategory C - Electroplating of Specialty Metals
   Subcategory D - Anodizing
   Subcategory E - Coatings
   Subcategory F - Chemical Etching & Milling

10. Organic Chemicals Manufacturing
    - Subcategory A - Nonaqueous Process
    - Subcategory B - Processes with Process Water Contact as Steam Diluent or Absorbent
    - Subcategory C - Aqueous Liquid Phase Reaction Systems

11. Inorganic Chemicals Manufacturing
    - Subcategory A - Aluminum Chloride Production
    - Subcategory B - Aluminum Sulfate Production
    - Subcategory C - Calcium Carbide Production
    - Subcategory D - Calcium Chloride Production
    - Subcategory E - Calcium Oxide & Calcium Hydroxide Production
    - Subcategory F - Chlorine & Sodium or Potassium Hydroxide Prod.
    - Subcategory G - Hydrochlorine Acid Production
    - Subcategory H - Hydrofluoric Acid Production
    - Subcategory I - Hydrogen Peroxide Production
    - Subcategory J - Nitric Acid Production
    - Subcategory K - Potassium Metal Production
    - Subcategory L - Potassium Dichromate Production
    - Subcategory M - Potassium Sulfate Production
    - Subcategory N - Sodium Bicarbonate Production
    - Subcategory O - Sodium Carbonate Production
    - Subcategory P - Sodium Chloride Production
    - Subcategory Q - Sodium Dichromate & Sodium Sulfate Production
    - Subcategory R - Sodium Metal Production
    - Subcategory S - Sodium Silicate Production
    - Subcategory T - Sodium Sulfate Production
    - Subcategory U - Sulfuric Acid Production
    - Subcategory V - Titanium Dioxide Production

12. Plastics and Synthetics
    - Subcategory A - Polyvinyl Chloride
    - Subcategory B - Polyvinyl Acetate
    - Subcategory C - Polystyrene
    - Subcategory D - Polypropylene
    - Subcategory E - Polyethylene
    - Subcategory F - Cellophane
    - Subcategory G - Rayon
    - Subcategory H - Acrylonitrile-Butadiene Styrene (ABS) & Styrene-Acrylonitrite (SAN) Resin Copolymers
    - Subcategory I - Polyester
    - Subcategory J - Nylon 66
    - Subcategory K - Nylon 6
    - Subcategory L - Cellulose Acetate
    - Subcategory M - Acrylics
    - Subcategory N - Ethylene-Vinyl Acetate Copolymers
    - Subcategory O - Polytetrafluoroethylene
    - Subcategory P - Polypropylene Fiber
    - Subcategory Q - Alkyds & Unsaturated Polyester Resins
    - Subcategory R - Cellulose Nitrate
    - Subcategory S - Polyamide (Nylon 6/12)
    - Subcategory T - Polyester Resins (Thermoplastic)
    - Subcategory U - Silicones

13. Soap and Detergent Manufacturing
    - Subcategory A - Soap Manufacturing
    - Subcategory B - Fatty Acid Manufacturing by Fat Splitting
    - Subcategory C - Soap Manufacturing by Fatty Acid Neutralization
    - Subcategory D - Glycerine Concentration
    - Subcategory E - Glycerine Distillation
    - Subcategory F - Manufacture of Soap Flakes & Powders
    - Subcategory G - Manufacture of Bar Soaps
    - Subcategory H - Manufacture of Liquid Soaps
    - Subcategory I - Oleum Sulfonation & Sulfonation
    - Subcategory J - Air-SO3 Sulfation & Sulfonation
    - Subcategory K - SO3 Solvent & Vacuum Sulfonation
    - Subcategory L - Sulfamic Acid Sulfation
    - Subcategory M - Chlorosulfonic Acid Sulfation
    - Subcategory N - Neutralization of Sulfuric Acid Esters & Sulfonic Acids
    - Subcategory O - Manufacture of Spray Dried Detergents
    - Subcategory P - Manufacture of Liquid Detergents
    - Subcategory Q - Manufacturing of Detergents by Dry Blending
    - Subcategory R - Manufacture of Drum Dried Detergents
    - Subcategory S - Manufacture of Detergent Bars & Cakes

14. Fertilizer Manufacturing
    - Subcategory A - Phosphate
    - Subcategory B - Ammonia
    - Subcategory C - Urea
    - Subcategory D - Ammonium Nitrate
    - Subcategory E - Nitric Acid
    - Subcategory F - Ammonium Sulfate
    - Subcategory G - Mixed & Blend Fertilizer Production

15. Petroleum Refining
    - Subcategory A - Topping
    - Subcategory B - Cracking
    - Subcategory C - Petrochemical
    - Subcategory D - Lube
    - Subcategory E - Integrated

16. Iron and Steel Manufacturing
    - Subcategory A - By-Product Coke
    - Subcategory B - Beehive Coke
    - Subcategory C - Sintering
    - Subcategory D - Blast Furnace (Iron)
    - Subcategory E - Blast Furnace (Ferromanganese)
    - Subcategory F - Basic Oxygen Furnace (Semi-wet Air Pollution Control Methods)
    - Subcategory G - Basic Oxygen Furnace (Wet Air Pollution Control Methods)
    - Subcategory H - Open Hearth Furnace
    - Subcategory I - Electric Arc Furnace (Semi-wet Air Pollution Control Methods)
    - Subcategory J - Electric Arc Furnace (Wet Air Pollution Control Methods)
    - Subcategory K - Vacuum Degassing
    - Subcategory L - Continuous Casting

17. Nonferrous Metals Manufacturing
    - Subcategory A - Bauxite Refining
    - Subcategory B - Primary Aluminum
    - Subcategory C - Secondary Aluminum Smelting
    - Subcategory D - Primary Copper Smelting
    - Subcategory E - Primary Copper Refining
    - Subcategory F - Secondary Copper
    - Subcategory G - Primary Lead
    - Subcategory H - Primary Zinc

18. Phosphate Manufacturing
    - Subcategory A - Phosphorus Production
    - Subcategory B - Phosphorus Consuming
    - Subcategory C - Phosphate
    - Subcategory D - Defluorinated Phosphate Rock
    - Subcategory E - Defluorinated Phosphoric Acid
    - Subcategory F - Sodium Phosphates

19. Steam Electric Power Generating
    - Subcategory A - Generating Unit
    - Subcategory B - Small Unit
    - Subcategory C - Old Unit
    - Subcategory D - Area Runoff

20. Ferroalloy Manufacturing
    - Subcategory A - Open Electric Furnaces with Wet Air Pollution Control Devices
    - Subcategory B - Covered Electric Furnaces & Other Smelting Operations with Wet Air Pollution Control Devices
    - Subcategory C - Slag Processing

21. Leather Tanning and Finishing
    - Subcategory A - Hair Pulp Unhairing with Chrome Tanning & Finishing
    - Subcategory B - Hair Save Unhairing with Chrome Tanning & Finishing
    - Subcategory C - Unhairing with Vegetable or Alum Tanning & Finishing
    - Subcategory D - Finishing or Tanned Hides
    - Subcategory E - Vegetable or Chrome Tanning or Unhaired Hides
    - Subcategory F - Unhairing with Chrome Tanning & No Finishing

22. Glass Manufacturing
    - Subcategory A - Insulation Fiberglass
    - Subcategory B - Sheet Glass Manufacturing
    - Subcategory C - Rolled Glass Manufacturing
    - Subcategory D - Plate Glass Manufacturing
    - Subcategory E - Float Glass Manufacturing
    - Subcategory F - Automotive Glass Tempering
    - Subcategory G - Automotive Glass Laminating
    - Subcategory H - Glass Container Manufacturing
    - Subcategory I - Machine Pressed & Blown Glass Manufacturing
    - Subcategory J - Glass Tubing (Danner) Manufacturing
    - Subcategory K - Television Picture Tube Envelope Manufacturing
    - Subcategory L - Incandescent Lamp Envelope Manufacturing
    - Subcategory M - Hand Pressed and Blown Glass Manufacturing

23. Asbestos Manufacturing
  - Subcategory A - Asbestos-Cement Pipe
  - Subcategory B - Asbestos-Cement Sheet
  - Subcategory C - Asbestos Paper (Starch Binder)
  - Subcategory D - Asbestos Paper (Elastomeric Binder)
  - Subcategory E - Asbestos Millboard
  - Subcategory F - Asbestos Roofing
  - Subcategory G - Asbestos Floor Tile
  - Subcategory H - Coating or Finishing of Asbestos Textiles
  - Subcategory I - Solvent Recovery
  - Subcategory J - Vapor Absorption
  - Subcategory K - Wet Dust Collection

24. Rubber Processing
  - Subcategory A - Tire & Inner Tube Plants
  - Subcategory B - Emulsion Crump Rubber
  - Subcategory C - Solution Crump Rubber
  - Subcategory D - Latex Rubber

25. Timber Products Processing
  - Subcategory A - Barking
  - Subcategory B - Veneer
  - Subcategory C - Plywood
  - Subcategory D - Hardboard-Dry Process
  - Subcategory E - Hardboard-Wet Process
  - Subcategory F - Wood Preserving
  - Subcategory G - Wood Preserving - Steam
  - Subcategory H - Wood Preserving - Boultonizing

26. Pulp, Paper, and Paperboard
  - Subcategory A - Unbleached Kraft
  - Subcategory B - Sodium Based Neutral Sulfite Semi-Chemical
  - Subcategory C - Ammonia Base Neutral Sulfite Semi-Chemical
  - Subcategory D - Unbleached Kraft-Neutral Sulfite Semi-Chemical (Cross Recovery)
  - Subcategory E - Paperboard from Waste Paper

27. Builders Paper and Board Mills
  - Subcategory A - Builders Paper and Roofing Felt

28. Meat Products
  - Subcategory A - Simple Slaughterhouse
  - Subcategory B - Complex Slaughterhouse
  - Subcategory C - Low Processing Packinghouse
  - Subcategory D - High Processing Packinghouse
  - Subcategory E - Small Processor
  - Subcategory F - Meat Cutter
  - Subcategory G - Sausage & Luncheon Meats Processor
  - Subcategory H - Ham Processor
  - Subcategory I - Canned Meats Processor
  - Subcategory J - Renderer

ES&WQIAC RECEIPT AND REVIEW OF EPA DOCUMENTS
GROUP I, PHASE II INDUSTRIES

Fed. Code	Industry	Contractors Rept. Rec'd.	Contractors Rept. Rev.	Draft Prop. Rec'd.	Draft Prop. Rev.	Proposal Rec'd.	Proposal Rev.	R-M-P Rec'd.	R-M-P Rev.	Promulgation
402	Cooling Water Intake Structures							9-10-74	9-18-74	
428	Rubber, Subcategories,E, F,G,H,I,J,K	2-21-74		7-2-74	10-3-74	8-23-74		12-2-74	12-12-74	
432	Meat Rendering	2- -74								
432	Meat Processing	1- -74		7-2-74	10-16-74	9-28-74		12-2-74	12-12-74	1-17-75
421	Nonferrous Metals - Subcategories D, E,F,G,H	6-11-74		7-5-75	9-26-74			1-30-75	1-31-75	3-24-75
429	Timber Prod. Subcategories I,J,K,L,M,N,O	2-21-74		7-8-74	10-1-74	8-26-74	11-7-74	11-29-74	12-2-74	
429	Timber Prod. Subcategories P,Q,R,S	3-29-74		7-8-74	10-8-74	11-22-74	12-2-74			
426	Glass, Subcategories A, B,C,D,E,F				8-29-74					
426	Glass, Subcategories H, I,J,K,L,M	5-8-74		7-22-74	8-21-74	8-21-74		12-14-74	12-21-74	1-16-75

ES&WQIAC RECEIPT AND REVIEW OF EPA DOCUMENTS
GROUP I, PHASE II INDUSTRIES

Fed. Code	Industry	Contractors Rept. Rec'd.	Contractors Rept. Rev.	Draft Prop. Rec'd.	Draft Prop. Rev.	Proposal Rec'd.	Proposal Rev.	R-M-P Rec'd.	R-M-P Rev.	Promulgation
427	Asbestos, Subcategories H, I,J,K	7-11-74		7-24-74	8-21-74	8-29-74		12-4-74	12-12-74	1-17-75
416	Plastics, Subcategories N, O,P,Q,R,S,T, U,V,W,X	3-29-74		7-25-74	11-1-74	9-20-74		12-11-74	12-15-74	1-29-75
413	Metal Finishing, Electroplating	2-21-74	3-22-75					3-15-75	3-24-75	4-24-75
415	Inorganic Chemicals, Subcategories W thru BK	2-21-74		9-12-74	9-19-74			3-11-75	3-18-75	
424	Ferroalloys			12-20-74	12-21-74			1-22-75	1-24-75	2-22-75
406	Grains, Subcategories G,H,I,J	5-3-74		8-12-74	8-17-74	9-17-74		12-1-74	12-6-74	1-17-75
408	Seafood, Subcategories A thru AG	3-29-74		10-21-74	10-26-74			1-9-75	1-11-75	
418	Fertilizer Subcategories F&G			8-19-74	8-30-74	10-7-74	11-15-74	12-7-74	12-9-74	1-14-75
	Cane Sugar	6-11-74	8-22-74					1-24-75	1-27-75	3-22-75

ES&WQIAC RECEIPT AND REVIEW OF EPA DOCUMENTS
GROUP I, PHASE II INDUSTRIES

Fed. Code	Industry	Contractors Rept. Rec'd.	Contractors Rept. Rev.	Draft Prop. Rec'd.	Draft Prop. Rev.	Proposal Rec'd.	Proposal Rev.	R-M-P Rec'd.	R-M-P Rev.	Promulgation
422	Phosphate, Subcategories D,E,F	5-6-74		9-19-74	9-24-74			1-9-75	1-10-75	1-27-75
	Foundries	7-30-74	3-7-75							
	Iron & Steel Forming & Finishing	2-21-74	8-28-74							
	Poultry	6-15-74	6-28-74	2-3-75	2-6-75	4-24-75				
430	Paper	8-28-74	9-5-74							
414	Significant Organic Chemicals	2-21-74		9-26-74	10-8-74					
	Fruits and Vegetables	11-20-74	12-11-74							

ES&WQIAC RECEIPT AND REVIEW OF EPA DOCUMENTS
GROUP II INDUSTRIES

Fed. Code	Industry	Contractors Rept. Rec'd.	Contractors Rept. Rev.	Draft Prop. Rec'd.	Draft Prop. Rev.	Proposal Rec'd.	Proposal Rev.	R-M-P Rec'd.	R-M-P Rev.	Promulgation
447	Paint & Ink	4-17-74		9-25-74	10-1-74	2-26-75				
	Converted Paper	4-17-74								
	Fish Hatcheries	4-17-74								
	Transportation Air		7-7-74							
	Transportation Trucking		7-6-74							
	Transportation Railroads		7-6-74							
	Transportation Waterways	5-3-74	7-6-74							
	Roofing & Paving	4-22-74		10-9-74	10-18-74	2-12-75				
	Auto and other Laundries	4-23-74	2-9-75							
	Coal Mining	1-16-75	1-30-75							
	Mineral Mining I	2-11-75	2-20-75							
	Mineral Mining II	2-15-75	2-27-75							

ES&WQIAC RECEIPT AND REVIEW OF EPA DOCUMENTS
GROUP II INDUSTRIES

Fed. Code	Industry	Contractors Rept. Rec'd.	Contractors Rept. Rev.	Draft Prop. Rec'd.	Draft Prop. Rev.	Proposal Rec'd.	Proposal Rev.	R-M-P Rec'd.	R-M-P Rev.	Promulgation
	Furniture (Also listed as Timber Products)	3-29-74		7-8-74	10-8-74	11-22-74	12-2-74			
	Petroleum & Gas Extraction	11-1-74	11-18-74							
	Machinery									
	Ore Mining & Processing									
	Foods & Bev. Beverages									
	Foods & Bev. Miscellaneous									
	Foods & Bev. Fats and Oils									
	Foods & Bev. Specialties									
	Concrete Production									
	Clay & Gypsum	1-15-75	1-24-75							
	Miscellaneous Industries									

ES&WQIAC RECEIPT AND REVIEW OF EPA DOCUMENTS
GROUP I, PHASE II INDUSTRIES

Fed. Code	Industry	Contractors Rept. Rec'd.	Contractors Rept. Rev.	Draft Prop. Rec'd.	Draft Prop. Rev.	Proposal Rec'd.	Proposal Rev.	R-M-P Rec'd.	R-M-P Rev.	Promulgation
406								12-4-74	12-9-74	
407	Pretreatment							"	"	
414								"	"	
426	Existing							"	"	
427								"	"	
430	Sources							"	"	
432								"	"	
409								"	"	
411								"	"	
412								"	"	
417								"	"	
405								"	"	
409								"	"	
431								"	"	

INFORMATION TRANSFER

Preceding page blank

INFORMATION SOURCES ON POINT SOURCE DISCHARGES

Much of the correspondence referenced below was generated as a result of the ES&WQIAC workshops held in July and August 1974. Most of the industrial categories listed are the Group I, Phase II, and Group II Industries explained elsewhere in this report.

AUTO AND OTHER LAUNDRIES:

Institute of Industrial Launderers, 1730 M St., N.W., Washington, D.C. Bulletin dated July 5, 1974, regarding effluent guidelines and comments.

Institute of Industrial Launderers, 813 Fisher Building, Detroit, Mich. 48202: Letter, dated May 23, 1974, forwarding technical report commenting on draft development document.

International Fabricare Institute, 8001 Georgia Ave., Silver Spring, Md. 20910: Report, dated April 1974, regarding comments on the draft development document.

Charles P. Keith Associates, 3068 Harris St., Kennesaw, Ga. 30144: Letter to the National Linen Service, Inc., 1180 Peachtree St., N.E., Atlanta, Ga., regarding comments and recommendations on effluent guidelines.

Linen Supply Association of America, P.O. Box 40247, 975 Arthur Godfrey Rd., Miami Beach, Fla. 33140: Letter, dated July 7, regarding proposed guidelines; technical analysis on draft development document.

Laundry Cleaners, Allied Trade Association, Upper Montclair, N.J.: tel/communication from Robert Ernatinger, managing director, regarding effluent guidelines.

(Note: Letters sent to the EPA National Field Investigation Center and included in the ES&WQIAC files were from: ENVIREX, 5103 W. Beloit Rd., Milwaukee, Wisc. 53201; Linen Supply Association; F.W. Means & Co., 5822 Western Ave.S., Chicago, Ill. 60636; Barnett L. Rosenthal, 8608 N.W. 59th Court, Tamarack, Fla.; Water Reclamation Services, Inc., 702 E. Montecito St., P.O. Drawer MM, Santa Barbara, Calif. 93102; and Wayne Towel and Linen Supply Company, 1516 Prospect Ave., Kansas City, Mo. 64127.

CONVERTED PAPER PRODUCTS:

American Paper Institute, 260 Madison Ave., New York, N.Y. 10016: Letter, dated July 23, 1974, forwarding copies of comments on draft development documents; Letter dated July 26, 1974, enclosing comments by International Paper Company.

Owens-Illinois, Forest Products Division, P.O. Box 1005, Toledo, Ohio: Letter, dated July 11, 1974, enclosing comments on draft development document.

Preceding page blank

FISH HATCHERIES AND FARMS:

Clear Springs Trout Company, Box 548, Buhl, Idaho 83316: Letter, dated July 30, 1974, from Hydroscience, Inc., to Trout Farmers Association forwarding a report describing the pollution control aspects of the commercial trout rearing industry.

Fish and Wildlife Service, LaSalle Building, 5th floor, 800 18th St., N.W., Washington, D.C. 20240: Letter from Mr. Charles Walker, chief of the Office of Environmental Assistance, forwarding a report and technical information in response to an ES&WOIAC workshop held July 9, 1974.

FRUITS AND VEGETABLES:

National Canners Association, 1133 20th St., N.W., Washington, D.C. 20036: Letter, dated July 2, 1974, transmitting a copy of a statement presented to the House Public Works Committee regarding the implementation of PL 92-500; Newsletter, reporting on the development of effluent guidelines for fruits and vegetables and seafood.

(Note: ES&WQIAC files also contain letters and reports sent to various EPA offices between July and December 1974.)

GLASS INDUSTRY:

New Jersey Department of Environmental Protection, P.O. Box 1390, Trenton, N.J. 08625: Newspaper clipping describing amendments to the state's air pollution control code with respect to particulate emissions from glass factories in South Jersey.

Owens-Illinois, Toldeo, Ohio 43601: Letter regarding comments on the July 8, 1974, workshop on pressed and blown glass.

(Note: The ES&WQIAC files also contain letters from Owens-Illinois to EPA regarding effluent limitations, and from the Glass Container Manufacturers Institute, 1800 K St., N.W., Washington, D.C. 20003, in response to the draft response to the draft report on the contractor's development document.)

INORGANIC CHEMICALS:

Manufacturing Chemists Association, 1825 Connecticut Ave., N.W. Washington, D.C. 20009: Letter, dated June 20, 1974, regarding the development documents for the inorganic chemicals, organic chemicals, plastics and synthetics, nonfertilizer phosphates, and transportation industries in relation to workshops scheduled July 8-12, 1974.

Monsanto Company, 800 N. Lindberg Blvd., St. Louis, Mo. 63166: Letter, dated May 3, 1974, regarding comments on proposed criteria for water quality as it appeared in the Federal Register in October 1973.

IRON AND STEEL:

American Iron and Steel Institute, 1000 16th St., N.W., Washington, D.C. 20036: Letter, dated July 25, 1974, enclosing the "Directory of Iron and Steel Works of U.S. and Canada, "and a study describing AISI by A.D. Little, Inc., Cambridge, Mass., on the "Impact of Environmental Requirements on Domestic Steel Industry;" Report on AISI comments on the draft development document for the hot forming and cold finishing segment of the industry.

Inland Steel Company, 3210 Watling St., East Chicago, Ind. 46312: Letter, dated July 17, 1974 to ES&WQIAC Member Paulson enclosing information on a report, entitled "Load Allocation Study of the Grand Calumet River and Indiana Harbor Ship Channel."

Republic Steel Corporation, Environmental Control, P.O. Box 6778, Cleveland, Ohio 44101: Letter, dated August 1, 1974, to statistical analyses of data and a computer printout.

MEAT PRODUCTS:

American Meat Institute, P.O. Box 3556, Washington, D.C. 20007: Letter, dated July 5, 1974, regarding comments sent to EPA on effluent limitations guidelines.

MINERAL MINING AND PROCESSING:

E.I. du Pont de Nemours and Company, Highland Plant, P.O. Drawer A, Lawtey, Fla. 32058: Letter, dated July 23, 1974, regarding the July 9, 1974, workshop and forwarding information on two plants in Florida and their operations.

Monsanto Company, St. Louis, Mo.: Letter, dated July 22, 1974, regarding comments on the industry relative to the workshop.

MISCELLANEOUS CHEMICALS:

Note: A number of papers are included in the ES&WQIAC files. The name of the author and the title of the paper follow:

G.L. Ayers, "How Processor Waste Loads Can Be Minimized."

Edwin L. Barnhart, Hydroscience, Inc., "Basic Elements of Waste Treatment" and "Biological Waste Treatment of Photoprocessing Effluents."

George R. Campbell, research engineer, Hydroscience, Inc., "Characteristics of Photographic Processing Effluents."

A.C. Cooley, Eastman Kodak Company, Rochester, N.Y. 14650, "Reuse and Recovery of Processing Chemicals."

T.J. Dagon, Eastman Kodak Company, "Special Applications of Photographic Processing Effluent Treatment."

D. Johnson, "Precipitation Techniques."

Richard F. Schwer, of E.I. du Pont de Nemours and Company, Wilmington, Del., "A Systematic Approach to Handling Wastewater Discharges."

MISCELLANEOUS FOODS AND BEVERAGES:

Note: This file includes a letter to EPA from the National Coffee Association of U.S.A., Inc., 120 Wall St., New York, N.Y., requesting a deadline extension for submission of data and clarifying the reasons for this recommendation.

NONFERROUS METALS:

Kennecott Copper Corporation, Engineering Center - Metal Mining Division, 1515 Mineral Square, Salt Lake City, Utah: Letter, dated July 16, 1974, commenting on the contractor's development document.

OIL AND GAS EXTRACTION:

Offshore Operators Committee, P.O. Box 50751, New Orleans, La. 70150: Letter, dated January 1, 1975, including scientific and technical information regarding the development of effluent limitations guidelines.

Note: The ES&WQIAC files also include letters to EPA from Mid-Continent Oil and Gas Association, 455 N. Lamar St., Jackson, Miss. 39202; Getty Oil Company, P.O. Box 1404, Houston, Tex.; and the Pollution Solution Group of South Texas Section of the American Institute of Chemical Engineers, 711 Fannin St., Houston, Tex. 77002.

ORE MINING AND DRESSING:

Hecla Mining Company, Wallace, Idaho 83873: Letter regarding the categorization for the industry and technical data concerning standards within the industry.

ORGANIC CHEMICALS:

Cleary, Gottlieb, Steen, and Hamilton, 1250 Connecticut Ave., N.W., Washington, D.C. 20036: Letter, dated February 13, 1975, transmitting copies of correspondence and filings relating to petitions for review of Phase I effluent guidelines and standards of performance.

Manufacturing Chemists Association, 1825 Connecticut Ave., N.W., Washington, D.C. 20009: Letters, dated May 5 and 17, 1974, regarding proposed guidelines and the draft development document for the organic chemicals and phosphate industries.

PAINT AND INK FORMULATION AND PRINTING:

National Paint and Coatings Association, 1500 Rhode Island Ave., N.W., Washington, D.C. 20005: Letter, dated July 5, 1974, commenting on the draft development document. (A letter from the association to EPA also is in the ES&WQIAC files.)

PHOSPHATE MANUFACTURING:

Manufacturing Chemists Association, Washington, D.C.: See letter, dated June 20, 1974, referenced in the listing under "Inorganic Chemicals".

PLASTICS AND SYNTHETICS:

Manufacturing Chemists Association, Washington, D.C.: See listing under "Inorganic Chemicals."

Union Carbide Corporation, P.O. Box 8361, South Charleston, W. Va. 25303: Letter pertaining to comments on the draft development document, Phase II.

PULP AND PAPER AND PAPERBOARD:

International Paper Company, 220 E. 42nd St., New York, N.Y. 10017: Letter, dated July 19, 1974, regarding information on raw waste flows from corrugated container plants.

National Forest Products Association, 1619 Massachusetts Ave., N.W., Washington, D.C. 20036: Letter, dated August 6, 1974, regarding the presentation of a report at the workshop.

Note: The files also contain correspondence to EPA from the American Hardboard Association, 20 N. Wacker Dr., Chicago, Ill. 60606, and the National Council of the Paper Industry for Air and Stream Improvement, 260 Madison Ave., New York, N.Y. 10016.

SEAFOOD:

National Canners Association, 1133 20th St., N.W., Washington, D.C. 20036: Letters, dated April 1, June 24, and December 19, 1974, commenting on draft development documents and proposed guidelines; Newsletter, dated February 2, 1975, regarding comments on Phase II guidelines and standards, proposed standards of performance for new sources and pretreatment standards for exising and new sources, and several additional new items relative to the industry.

TIMBER PRODUCTS:

The files include a letter regarding draft development documents and proposed guidelines to EPA from the Accoustical and Insulating Materials Association, 205 W. Touhy Ave., Park Ridge, Ill. 60068.

TRANSPORTATION:

Manufacturing Chemists Association, Washington, D.C.: See listings under "Inorganic

National Tank Truck Carriers, Inc., 1616 P St., N. W. Wahsington, D.C.: Letter from Clifford J. Harvison, managing director, dated July 9, 1973, regarding comments on the development document on the tank truck industry.

WATER SUPPLY:

American Water Works Association, 8390 Del Mar Blvd., St. Louis, Mo. 63124: Letter, dated November 27, 1974, to ES&WQIAC Member McCall regarding comments from various water supplies throughout the U.S. emphasizing a statement made at the August 13, 1974, workshop.

E.I. du Pont de Nemours and Company, Wilmington, Del., Letter, dated August 6, 1974, commenting on various aspects of influent water quality with types of waste generated.

St. Louis County Water Company, 8390 Del Mar Blvd., University City, Mo. 63124:Letters, dated September 4 and October 15, 1974, to ES&WQIAC Member McCall, commenting on chemical solids along the Missouri River, effluent guidelines language, and waste disposal methods and their associated costs.

ES&WQIAC also received a letter from Dr. R.A. Gallop, University of Manitoba, Winnipeg, Canada R 3T 2N2, dated September 24, 1974, transmitting his paper, entitled "Pollutionless Cyclic Process Systems , and explaining his theory for designing pollutionless systems of high process efficiency into new plants and to adapt wherever possible into old plants.

APPENDIX

APPENDIX

This Appendix includes information on ES&WQIAC's Budget, Proposed Work Plan, FY '75 Work Plan, Charter Renewal, Charter and Special Activities of the Chairman.

Preceding page blank

B U D G E T

No funds or staff positions for carrying out ES&WQIAC's functions were provided in Section 515 of PL 92-500. Therefore, all operating funds must be provided in EPA and, more particularly, the Office of Water Planning and Standards. The many program needs OF EPA necessary to support the mandate of PL 92-500 have placed constraints on funds available for ES&WQIAC.

The allocation for Fiscal 1975 is at the same level as it was in Fiscal 1974. Allowable expenditures totalled $180,000.

ES&WQIAC's request for additional funds of $57,000 to hire two staff engineers and $132,000 for technical consultants and contracts was denied by EPA. In her letter to the ES&WQIAC chairman, Lillian D. Regelson, Deputy Assistant Administrator for Water Planning and Standards, said the decision was based primarily on three reasons:

> "(1) A loss of $1.3 million and 11 positions in the Office of Water Planning and Standards for FY-75;
> (2) Higher priorities for other OWPS programs; and
> (3) Objections to some of the tasks and apparent expansion of the role of the Committee as described in the proposed work plan."
> (An objection not concurred in by ES&WQIAC.)

The following work plan was structured in accordance with a request from EPA. The task statements describe the identification of the problems for which solution was being sought, the approaches to be used in finding the solutions, the resources necessary to complete the tasks, and the end product to be produced.

A consolidated work plan follows the proposal sent to EPA.

PROPOSED WORK PLAN FORWARDED TO EPA ON MAY 16, 1974

TASK I

PROBLEM: How are activities and information of other Federal Agencies related to EPA through PL 92-500?

AUTHORITY: PL 92-500, Section 515(b)(4), states that: "In preparing information for transmittal, the Committee shall avail itself of the technical and scientific service of any Federal agency, including the United States Geological Survey and any national environmental laboratories which may be established." A mechanism is required to facilitate this input in an effective form.

APPROACH: I. Establish a series of coordinated seminars with the scientific and technical personnel as well as the legal representative of the following government agencies in turn;

1. Coast and Geodetic Survey
2. Interior Department
3. Agriculture Department
4. Department of Transportation
5. Department of Defense
    - (a) Army
    - (b) Navy
    - (c) Air Force
6. Department of Health, Education, & Welfare
7. National Bureau of Standards (Department of Commerce)
8. Atomic Energy Commission/Federal Energy Administration
9. Department of Commerce
10. Others

II. Prepare documentation and transcripts of these meetings to bring to attention of the Administrator of EPA and keep him apprised of possible relationships between authorities and administrators of other Federal agencies and possibilities of assisting EPA's Administrator in his decision-making process based on inputs from the other Federal agencies. Procedures for logistics will be established by the Executive Secretary.

A communication team comprised of a technical staff person and legal counsel and one member of the Committee will be established to set up and follow through a series of coordinated meetings as described above and prepare draft documents of these discussions for Committee review. Documents will be mailed to each member for analysis and editing. Final editing for each document will be accomplished in the Committee's office by the Executive Secretary and Chairman and submitted for Committee approval at each monthly meeting of the fiscal year. Completed documents containing this additional information will be submitted monthly to the Administrator of EPA.

TASK I Continued

RESOURCES: One Technical Staff Member
Legal Counsel of the Committee
One or More Committee Members

TIME: 1 3/4 Man-Years

Meeting Arrangements
Meeting Times
Transportation Time

Composition Time
Circulation Time
Final Editing Time

PRODUCT: Position Papers to Administrator of EPA on each item described above.

TASK II

PROBLEM: What is the extent of non-water impacts of PL 92-500 in relation to BPT and BAT?

AUTHORITY: Non-water aspects of Industrial Effluent Limitations Part II, Section (5), page 7 of the R. F. P. # WA 73X-002

APPROACH: Establish a communication series with State and Local governments and private agencies and organizations to review specific major industries in relation to:

Air Pollution Regional Limitations
Air Pollution Monitoring
Air Pollution Control
Solid Waste Disposal Regulations
Noise
Land Use Laws/Zoning Regulations
Energy Requirements

Evaluate each promulgated document for each generic industry involved and analyze the total effects of these non-water implications in PL 92-500 on each area when the particular industry provides a major economic support for the region in terms of number of persons employed and economic stability of the region and relate this to the natural environment in the given area in terms of continual abuse and future management of the area dependent upon the impact of PL 92-500.

RESOURCES: Technical Staff person collects and evaluates these data and interacts with EPA on initial findings - review by legal counsel and consultation with EPA's legal advisors where necessary.

Preparation of Documents - Secretarial Support
Circulation of Documents for Review by ES&WQIAC Members
Final Preparation of ES&WQIAC Position Papers on Non-water impacts of PL 92-500 on each of the first 27 given industries.

TIME: 1 3/4 man years

Data Collection
Data Analysis-Evaluation-Assessment
Legal Evaluation of EPA Regulations as these apply in each instance
Draft Document Construction
Circulation Time
Final Editing
Review of ES&WQIAC at Monthly Meeting
Final
Transmittal to Administrator

PRODUCT: Transmittal of these Position Papers to the Administrator, EPA

TASK III

PROBLEM: Continuing evaluation of industrial effluent limitation for additional industries.

AUTHORITY: Section 304 (b).
Continued in-depth scientific and technical analysis of E.G.D. documents relating to the establishment of Effluent Limitations for industrial point-source discharge.

APPROACH: Implementation of new schematic, attached, for earlier impact with the development of these limitations.

RESOURCES: Public Hearings - at least one Committee Member
Committee Meetings - Quorum (5 Members)
Industry/EGD Committee Workshops (at least one member at each Workshop)

TIME: One man week per each technical analysis
Two man days per each workshop
Nine man days per each Committee Meeting
Minimum of one man day for each Public Hearing
1/3 year for each of 9 Committee Members

PRODUCT: Committee evaluation documents of each industrial limitation;
Minutes of Meetings and Hearings;
Annual report to Administrator; direct input to Effluent Guidelines Division.

TASK IV

PROBLEM: How can toxic regulations be better established in view of items described below?

AUTHORITY: Selected from Regelson Communication 3/2/74, List of Questions of Interest to Office of Water Programs.

APPROACH: Relative to Section 307 - ES&WQIAC will assist EPA in revision of selection criteria, determination, and limitations to be placed on toxic materials based on the outcome of present court hearings.

Assist EPA in determination of methods for the control of large volume discharges of low level toxic substances.

Assist EPA in the possible development of a toxicity testing procedure for new chemicals prior to marketing and/or listing on the toxic materials list.

Establish an extensive communication-line with manufacturers and users of materials on the toxic list and hold workshops to gather additional technical information through workshops and public hearings.

Transmit such information in relevant form to Office of Water Programs.

Provide at least 4 seminars with participants from the National Academy of Science, NIH, EPA, R&D Groups, Members of Citizen Groups - directed toward the major problems, itemized above.

RESOURCES: Expert Committee Members - Minimum 3
Secretarial Support

TIME: Minimum 2 workshops each material - 3 members - 3 man months + 10 1 1/4 man years.

PRODUCT: Position papers and technical information flow to relevant EPA Section.

TASK V

PROBLEM: The evaluation of factors involved in the many in-plant processes which can be incorporated in changes/alternatives/innovations in all areas including by-product/waste-product conversions and utilizations for inclusion in descriptions of BPT/BAT.

AUTHORITY: Request for Proposal, Section II, Page 6, Item #3(G) Letter of Lillian Regelson to ES&WQIAC 3/2/74

APPROACH: On-site visits and technical discussion between industry/ES&WQIAC/Contractors; analysis of technical data; comparative studies of technology transfer possibilities in this regard.

RESOURCES: Technical Engineering Staff of ES&WQIAC
Committee Members
External Engineering Consultants When Necessary
Secretarial Support
Administrative Support

TIME: 1 3/4 Man Years

PRODUCT: Derived methodology within industries presented to EPA for inclusion in RPF; results of survey presented to EPA for consideration in revision of Phase I documents.

RESOURCES:	Task #1	Time/Man-Years	Product
	Technical Personnel		Documentary
	Committee Members	1 3/4	Evidence
	Secretarial Help		Position Paper
	Administrative Support		
	Task #2		
	Technical Personnel		
	Committee Member	1 3/4	Documentary
	Secretarial Help		Position Papers
	Administrative Support		
	Task #3		
	Committee Members		
	Secretarial Help	1/3 x 9	Position Paper
	Administrative Support		
	Task #4		
	Committee Members		
	Contractor Services	1 1/4	Position Paper
	Secretarial Help		
	Administrative Support		
	Task #5		
	Technical Support		
	Contractual Services	1 3/4	New Methodology
	Secretarial Help		
	Administrative Support		

Man-Years Available:	7¼ TOTAL
Technical Engineer	1 Man-Year
Technical Engineer	1 Man-Year
Committee Members @ 60 Days = 1/4 Man-Year x 9	2 1/4 Man-Years
Secretarial Help	2 Man-Years
Executive Director	1 Man Year
Administrative Support	1 Man-Year

ES&WQIAC COMMITTEE WORK PLAN (FY75)

It has been proposed that the following tasks and work plans be adopted for ES&WQIAC for the new fiscal year in order to accomplish the maximum production of end product in relation to providing, assessing, and evaluating scientific and technical information for transmission to the Administrator of EPA.

I. Document Review

Overall engineering responsibilities for review of documents from Effluent Guidelines Division.

Don Bloodgood (coordinator)	Ramon Guzman
Wes Eckenfelder	Lloyd Smith

II. Early Inputs for Current Effluent Limitation Development

Early ES&WQIAC guidance on approach and document preparation for the development of effluent limitations. This will include workshops and special tasks for at least the following industries:

Miscellaneous Foods and Beverages	Ore Mining and Dressing
Machinery and Mechanical	Water Supply

(Others)

All Committee Members (Brossman - Coordinate, development)

III. Anticipating Inputs for Future Effluent Limitation Development

Ongoing review for revision and updating of effluent limitations. Data input design and acquisition. Development of a broader base of data sources. Possible Matrix Workshops.

Glenn Paulson	Martha Sager
Wes Eckenfelder	Martin Brossman (utilize additional
Blair Bower	technical staff support when available)

IV. Public Hearings for Public Interest Groups

Selected series of meetings involving public interest groups in relation to the possible economic implications and environmental impact on the public of PL 92-500. This task will have particular reference to ES&WQIAC responsibilities in order to advise the Administrator about public reception and response to the progress EPA is making on PL 92-500 in the area of industrial point source discharge.

Glenn Paulson	Martin Brossman
Bob McCall	

V. Federal Liaison.

Liaison with other federal agencies on positions and problems relating to PL 92-500 and preparation of reports for transmittal to the Administrator.

Martha Sager
Bob McCall
Martin Brossman

VI. Special Legal Tasks

Coverage and preparation of written reports to ES&WQIAC on hearings and legal actions related to designated industries and toxic materials. Maintenance of liaison with the General Counsel's Office in EPA and other federal agencies as required.

Blair Bower
Rose Mattingley
Bob Grieves

VII. Matrix Development

Coordination of development and implementation of matrix method by EPA.

Martha Sager
Wes Eckenfelder
Bob Grieves
Martin Brossman

VIII. Coordination with National Academy of Science

Coordination of National Academy of Science review of EPA in relation to impact on ES&WQIAC responsibilities (with special reference to the inclusion of the matrix in the EPA R&D Program.)

Glenn Paulson
Martha Sager
Lloyd Smith
Martin Brossman

IX. Economic Analysis and Liaison with National Commission on Water Quality

Expansion of ES&WQIAC economic analysis inputs and coordination with NCWQ.

Blair Bower
Wes Eckenfelder
Martha Sager
Martin Brossman

X. Toxic Effluents

Review of effluent limitations, analysis of legal and technical aspects in liaison with other federal agencies on Section 307 of PL 92-500.

Lloyd Smith
Martha Sager
Glenn Paulson (participation dependent on current court actions)

XI. **ANNUAL REPORT**

Preparation of second Annual Report of ES&WQIAC.

All Members	**Martin Brossman**

CONCURRENCE **NON-CONCURRENCE**

DECISION

approved

July 12, 1974
DATE

CHAIRMAN

CHARTER RENEWAL

A renewal charter to continue ES&WQIAC for two years was signed by the EPA Administrator on October 17, 1974, in accordance with the Federal Advisory Committee Act (Public Law 92-463). Under that law, statutory advisory committees in existence on January 5, 1973, were terminated January 5, 1975, unless otherwise provided for by law, or unless the Federal agency involved determined that any such committee has a specific function, created by statute and continuing in nature.

Despite EPA's action, there is some doubt as to whether or not ES&WQIAC falls under the purview of PL 92-463. Senator Jennings Randolph, of West Virginia, the chairman of the Senate Public Works Committee, maintains that it does not. In a letter to EPA Administrator Train, Senator Randolph said:

> "While the Committee may be subject to many of the provisions of the Act as an advisory committee,... the Committee was created by statute...I object to any effort to establish a termination date for the Committee by agency order..."

EPA Order 1130.17A, renewing ES&WQIAC's charter, together with the inputs for charter renewal follows:

ENVIRONMENTAL PROTECTION AGENCY
ORDER 1130.17A
NOVEMBER 19, 1974

ORGANIZATION AND FUNCTIONS - COMMITTEES, BOARDS, PANELS, AND COUNCILS

EFFLUENT STANDARDS AND WATER QUALITY INFORMATION ADVISORY COMMITTEE

1. PURPOSE. This Order is reissued to renew the Effluent Standards and Water Quality Information Advisory Committee in accordance with the requirements of section 14(b)(2) of P.L. 92-463, Federal Advisory Committee Act, dated October 6, 1972. The Office of Water and Hazardous Materials provides the necessary support for the Committee.

2. AUTHORITY. The Committee was created under section 515 of the Federal Water Pollution Control Act, as amended, October 18, 1972; and rechartered January 5, 1973, to include requirements under section 9(c) of the Federal Advisory Committee Act.

3. OBJECTIVES AND SCOPE OF ACTIVITY. The Committee will provide, assess, and evaluate scientific and technical information on effluent standards and limitations as required under the Federal Water Pollution Control Act, as amended.

4. FUNCTIONS. The functions of the Committee shall be:

a. To develop technical information as required for the Administrator to use in making regulatory decisions on effluent standards and water quality.

b. To review regulations published or proposed for publication pursuant to sections 304(b), 306, and 307(a) of P.L. 92-500.

c. To conduct public hearings as required to provide the Administrator with technical information for the promulgation of regulations mandated by sections 304(b), 306, and 307(a) of P.L. 92-500.

5. COMPOSITION AND MEETINGS. The Committee will consist of a Chairman and eight members appointed by the Administrator for four-year terms. Members may be reappointed. Members of the Committee will be selected from the scientific community, qualified by education, training, and experience to provide, assess, and evaluate scientific and technical information on effluent standards and limitations. Staff members for the Committee effort, which are authorized by section 515, will be employed on a full-time basis. Meetings of the Committee will be held, as needed, as called by the Executive Secretary. A full-time salaried officer or employee of the Agency will be designated as the Executive Secretary who will be present at all meetings and is authorized to adjourn any such meeting whenever he determines it to be in the public interest. Five members of the Committee shall constitute a quorum, and official actions of the Committee shall be taken only on the affirmative vote of at

least five members. A special panel composed of one or more members upon order of the Committee shall conduct any hearing authorized by section 515 of the Act and submit the transcript of such hearing to the entire Committee for its action thereon. The Committee is authorized to make such rules as are necessary for the orderly transaction of its business. The estimated annual operating cost of the Committee totals $180,000.00 which includes 3.0 man-years staffing requirement.

6. DURATION. The Effluent Standards and Water Quality Information Advisory Committee is hereby renewed and will terminate October 17, 1976, unless extension beyond that date is authorized in accordance with section 14 of the Federal Advisory Committee Act.

7. SUPERSESSION. EPA Order 1130.17 is superseded.

Russell E. Train
Administrator

ACTIVITY PARTICIPATION

Between March 2, 1974, and March 2, 1975, Dr. Sager, in her capacity as ES&WQIAC chairman, participated in or addressed the following organizations:

*Wissahickon Valley Watershed Association, Ambler, Pa., April 20, 1974.

*Virginia Water Pollution Control Association, Natural Bridge, Va., April 29 and 30, 1974.

*Industrial Waste Conference, Purdue University, Lafayette, Ind., May 7, 1974.

*Upper Midwest Hospital Conference and Allied Organization, Minneapolis, Minn., May 9, 1974.

*Texas Water Pollution Control Association, Arlington, Tex., May 29-31, 1974.

*Hazardous Materials Advisory Committee, Science Advisory Board, EPA, Arlington, Va., May 14, 1974.

*Puerto Rico Water Pollution Control Association, San Juan, P.R., July 27, 1974.

*Pennsylvania Water Pollution Control Association, University Park, Pa., August 8-10, 1974.

*American Chemical Society, Atlantic City, N.J., September 10, 1974.

*Synthetic Organic Chemicals Manufacturers Association, Saddlebrook, N.J. (Presentation of Award), October 3, 1974.

*Annual Water Pollution Control Federation (47th), Denver, Colo., October 8, 1974.

*American Society of Metals, Detroit, Mich., October 21, 1974.

*Operations Research Society Annual Meeting, San Juan, P.R., October 16-18, 1974.

*Expo '74 - Learning for Survival: A Symposium on Environmental Education and Water Quality for Future, Spokane, Wash., October 27, 1974.

U.S. GOVERNMENT PRINTING OFFICE: 1975— [illegible]

Preceding page blank